

Factsheet

NPDES permit # WA-000080-9  
Weyerhaeuser Company  
Cosmopolis, Washington

**FACT SHEET FOR NPDES PERMIT WA-000080-9**

**FACILITY NAME: WEYERHAEUSER COMPANY, COSMOPOLIS MILL**

## TABLE OF CONTENTS

INTRODUCTION .....	4
BACKGROUND INFORMATION .....	6
DESCRIPTION OF THE FACILITY .....	6
History.....	6
Industrial Process.....	6
Normal production year .....	6
Discharge Outfall.....	6
Sanitary Wastewaters.....	7
PERMIT STATUS.....	7
SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT .....	7
WASTEWATER CHARACTERIZATION .....	8
SEPA COMPLIANCE.....	8
PROPOSED PERMIT LIMITATIONS.....	8
DESIGN CRITERIA .....	9
TECHNOLOGY-BASED EFFLUENT LIMITATIONS OUTFALL 001 .....	9
History of effluent guidelines used in previous permits .....	9
1998 effluent guidelines.....	9
The type of treatment required in the guidelines .....	10
Type of pulps made by Weyerhaeuser company's Cosmopolis mill.....	10
Determination of AKART for conventional pollutants .....	10
Determination of AKART for Acetate grade pulp .....	11
Determination of AKART for Paper grade pulp.....	12
Determination of AKART for the bleaching process used at the mill.....	12
Best management practices.....	15
Total chlorine Free (TCF) study .....	15
SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS .....	15
Numerical Criteria for the Protection of Aquatic Life.....	15
Numerical Criteria for the Protection of Human Health.....	15
Narrative Criteria .....	16
Antidegradation.....	16
Critical Conditions.....	16
Mixing Zones.....	16
Description of the Receiving Water.....	16
Surface Water Quality Criteria .....	17
Consideration of Surface Water Quality-Based Limits for Numeric Criteria .....	17
Fecal coliform extended mixing zone.....	18
Water quality analyses outfall 001.....	27
Whole Effluent Toxicity .....	29
Human Health.....	29
Sediment Quality .....	29

PREVIOUS LIMITATIONS FOR OUTFALL 002 .....	30
GROUND WATER QUALITY LIMITATIONS.....	30
COMPARISON OF EFFLUENT LIMITS WITH THE EXISTING PERMIT ISSUED May 5, 1991 .....	30
MONITORING REQUIREMENTS .....	32
LAB ACCREDITATION .....	32
OTHER PERMIT CONDITIONS .....	32
REPORTING AND RECORDKEEPING .....	32
NON-ROUTINE AND UNANTICIPATED DISCHARGES .....	32
SPILL PLAN .....	33
SOLID WASTE PLAN.....	33
OUTFALL EVALUATION .....	33
TREATMENT SYSTEM OPERATING PLAN .....	33
GENERAL CONDITIONS .....	33
PERMIT ISSUANCE PROCEDURES .....	34
PERMIT MODIFICATIONS .....	34
RECOMMENDATION FOR PERMIT ISSUANCE .....	34
REFERENCES FOR TEXT AND APPENDICES.....	34
APPENDIX A--PUBLIC INVOLVEMENT INFORMATION .....	35
APPENDIX B--GLOSSARY .....	36
APPENDIX C--TECHNICAL CALCULATIONS .....	39
APPENDIX D—STUDIES .....	39
APPENDIX E--RESPONSE TO COMMENTS.....	39
Dennis Davies, Weyerhaeuser Company.....	39
Frank Meriwether, Department of Health.....	40
Brady Engvall, GH/ Willapa Oyster Growers Association .....	41
Randal M Cox, Weyerhaeuser Cosmopolis Pulp Mill.....	45
Ken Johnson, Weyerhaeuser .....	60
Dean Schwickerath, Wildlife Forever of Grays Harbor .....	63
Greg Wingard, Waste Action Project .....	66
Kristine Koch, Environmental Protection Agency .....	68
Rick Wilson , Surfrider Foundation.....	78
The Honorable Brian Hatfield , Washington State Legislator.....	80
Michael Tracy, Economic Development Council.....	83
Frank Prochaska, Association-Of-Western-Pulp-And-Paper-Workers .....	84
Robin Downey, Pacific Coast Shellfish Growers Association .....	85

Dr. Mansour Samadpour, IEH, Inc. ....	86
Robert W. Schanz, Secretary, Chehalis River Council.....	89
Laurie Valeriano, Washington Toxics Coalition .....	91
Craig Zora, Department of Natural Resources .....	100
Randal M. Cox, Weyerhaeuser Company - supplemental comments .....	100
Arthur (R.D.) Grunbaum, Friends of Grays Harbor .....	102

## INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the State of Washington on the basis of Chapter 90.48 RCW which defines the Department of Ecology's authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the State include procedures for issuing permits (Chapter 173-220 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix E--Response to Comments.

<b><u>GENERAL INFORMATION</u></b>		
Applicant	Weyerhaeuser Company	
Name and Address	Cosmopolis Pulp Mill, 1701 First Street, Cosmopolis, Washington 98537	
Type of Facility:	Magnesium based sulfite pulp mill	
SIC Code	2611	
Discharge Locations	Outfall 001 Waterbody's Name: Grays Harbor Latitude: 46° 57' 15" N. Longitude: 123° 51' 00" W.	Outfall 002 Chehalis River 46° 57' 32" N. 123° 45' 20" W.
Water Body ID Number	WA-22-0030	WA-22-4010

**BACKGROUND INFORMATION***DESCRIPTION OF THE FACILITY***HISTORY**

The mill is located in Cosmopolis, Washington adjacent to the Chehalis River. The mill was constructed in 1957 as a paper grade sulfite pulp mill. In 1962 the mill began conversion to a dissolving and specialty grade sulfite pulp mill. Today the Mill has the capability to produce 500 tons per day of dissolving and paper grade sulfite pulp.

**INDUSTRIAL PROCESS**

The mill uses a magnesium bisulfite cooking acid for their pulp production. The cooking process uses magnesium bisulfite with free sulfur dioxide. The mill averaged 475 ADTD salable products in 2000. The off-of-the-machine production was 495 ADTD. The wood chips used in the pulping process are obtained from both company owned and privately owned timberland. The wood chips are trucked onsite. Approximately 365,000 tons of hemlock, alder, and fir are used to make 146,000 metric tons of paper and dissolving grade pulp. A versatile bleaching process enables the mill to produce a wide range of specialty pulps. The bleaching stages consist of chlorine dioxide, oxygen, caustic soda, and hydrogen peroxide. The pulp is sold for the manufacturing of such things as photographic paper, plastic molding compounds, acetate yarns, cigarette filters, air laid towels, and sanitary products. About half of the mill production is sold outside North America. The mill currently employs 282 people. Since 1966 the mill has had secondary treatment. The secondary treatment system was expanded in 1972 and in 1980. With the addition of the oxygen bleaching stage in 1990, the mill accepted a dioxin limit of 0.28 mg/day. In 1996, the mill applied for a notice of construction to build the Concentrated Oxygen Extraction Liquor (COEL) project. Besides reducing the VOC by 129 ton/year, the project reduced the influent biochemical oxygen demand (BOD<sub>5</sub>) by 40,000 pounds/day into the secondary wastewater treatment system. This reduction of BOD<sub>5</sub> enhanced the company's ability to maintain higher oxygen levels within the aeration basins of the secondary activated sludge system.

**NORMAL PRODUCTION YEAR**

The production for 2000 represents a normal production year. The production for 2001 was abnormal due to labor difficulties. The production for 2000 will be used in all calculation of limits that are a function of production.

**DISCHARGE OUTFALL**

The mill has two outfalls, one for the treated process wastewater (Outfall 001) and the other for stormwater, fresh water-treatment-system backwash, and freshwater overflow (Outfall 002). Outfall 001 discharges into the upper part of the south channel of Grays Harbor. Outfall 002 discharges into the Chehalis River.

The process wastewater from the pulping and washing of the pulp is pumped to four earthen aeration basins and to an unaerated storage lagoon if the grade of pulp being produced has an extremely high BOD. The water in the four aerated basins is discharged to two secondary clarifiers where the secondary sludge is settled. The sludge is either wasted and sent to the recovery furnaces or returned to the aeration basins. The effluent, about 3 MGD, is disinfected and is mixed with the bleach plant effluent. The total flow at this point is about 24 MGD. The treated water flows by gravity in a 42 inch i.d. wood stave pipe to Pond A pumping station located three miles west of the mill. The treated effluent is discharged into Grays Harbor through a diffuser system near Pond D.

#### SANITARY WASTEWATERS

All of the sanitary wastewater is discharged into the City of Cosmopolis' collection system. The sanitary wastewater from the City of Cosmopolis' collection system is discharged into the City of Aberdeen's collection system and is treated by the City of Aberdeen's secondary wastewater treatment system. The sanitary wastewater is discharged under the City of Aberdeen's NPDES permit.

#### *PERMIT STATUS*

The previous permit for this facility was issued on May 10, 1991 and was modified on May 24, 1991, June 10, 1992 and May 28, 1993. The previous permit placed effluent limitations on BOD<sub>5</sub>, total suspended solids (TSS), fecal coliform, pH, and 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) from outfall 001 and BOD<sub>5</sub>, Oil and Grease, pH, and fecal coliform from outfall 002. Absorbable organic halide (AOX) was limited to show compliance with the dioxin limit since the dioxin mass limit was based on a concentration below the detection limit. The company was required to monitor and record wastewater flows from outfalls 001 and 002. The previous permit required the company to monitor acute toxicity of both outfalls with 80 percent of the test fishes surviving in 65 percent effluent.

An application for permit renewal was submitted to the Department on November 10, 1995 and accepted by the Department. Since the application was submitted several years ago without the permit being reissued, the permittee was requested to retest and submit an updated application to Ecology. The revised application was received on December 12, 2001.

#### *SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT*

The facility last received a Class I inspection in August 2002 and a Class II inspection on March 25 and 26, 2002.

During the history of the previous permit, the Permittee has generally remained in compliance with their NPDES permit based on Discharge Monitoring Reports (DMRs) submitted to the Department and inspections conducted by the Department except for fecal coliform, BOD<sub>5</sub>, and bioassays. The mill had two daily maximum limit excursions for BOD in the past two years. The limit used for permit compliance is dependent on the Chehalis River daily flow. The mill had one exceedance of their lower daily maximum BOD limit in September 2000 and the other in September 2001. They had a series of bioassay failures in the first half of 1999. The company

performed a TI/TRE study that failed to identify the problem. However, they independently discovered that the failures were due to low ammonia in the secondary treatment system. In March through June 2001, the company had several other bioassay failures. Another order was issued and bioassay tests starting in July had survival of the test fishes that met the NPDES permit requirement. After addition of more phosphorus and improving the settling of solids, the bioassay tests show sufficient improvements.

#### *WASTEWATER CHARACTERIZATION*

The proposed wastewater discharge was characterized for the following regulated parameters from the revised permit application:

**Table 1: Wastewater Characterization**

	Outfall 001	Outfall 002
<b>Parameter</b>	<b>Concentration</b>	<b>Concentration</b>
Sulfates	650 mg/L	33 mg/L
Aluminum	0.69 mg/L	0.05 mg/L
Barium	0.04 mg/L	-
Boron	0.07 mg/L	0.033 mg/L
Iron	1.26 mg/L	2 mg/L
Magnesium	98.6 mg/L	6.6 mg/L
Manganese	1.26 mg/L	0.18 mg/L
Titanium	0.04 mg/L	-
Copper	18. µg/L	-
Zinc	48.0 µg/L	-
Phenols	0.04 mg/L	0.02 mg/L
Chloroform	130. µg/L	14 µg/L

#### *SEPA COMPLIANCE*

There are no SEPA requirements related to issuance of the proposed permit.

#### **PROPOSED PERMIT LIMITATIONS**

Federal and State regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations are based upon the treatment methods available to treat specific pollutants. Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC),



Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992). The more stringent of these two limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the revised application. The effluent constituents in the application were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the State of Washington were determined and included in this permit. Ecology does not develop effluent limits for all pollutants that may be reported on the application form as present in the effluent. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation and do not have a reasonable potential to cause a water quality violation. Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the non-reported pollutants. Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department of Ecology. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

#### *DESIGN CRITERIA*

In accordance with WAC 173-220-150 (1)(g), flows or waste loading shall not exceed approved design criteria. The wastewater treatment system is designed to treat the wastewater load from the current production of pulp and to meet the NPDES permit. The company has investigated every method that seems possible to control fecal coliform in the effluent.

#### *TECHNOLOGY-BASED EFFLUENT LIMITATIONS OUTFALL 001*

##### HISTORY OF EFFLUENT GUIDELINES USED IN PREVIOUS PERMITS

Technology-based limitations are set by regulations or developed on a case by case basis. The federal effluent guidelines for Best Practicable Control Technically available (BPT) was defined in Part 430 Subpart K for dissolving sulfite subcategory in the 1982 effluent guidelines. These guidelines were published in the federal register on November 18, 1982 and March 30, 1983. The federal effluent guidelines for Best conventional pollutants Control Technology (BCT) for these categories were defined on December 17, 1986 to be the same as BPT previously defined in March 1983. BCT and BPT were defined more than ten years ago. With BCT and BPT being defined longer than ten years, it is Ecology policy to determine if they are still valid and if they can still be considered equivalent to all known and reasonable treatment (AKART) for these categories of paper making.

##### 1998 EFFLUENT GUIDELINES

On April 15, 1998, the Environmental Protection Agency promulgated effluent guidelines for the bleached Kraft Papergrade and Soda subcategories and Papergrade Sulfite subcategory. The

1998 allowances for BOD and TSS in pounds per 1000 pounds of pulp produced for the above categories were set at the same values as the allowances in the effluent guidelines published in 1982.

#### THE TYPE OF TREATMENT REQUIRED IN THE GUIDELINES

Throughout the history of the effluent guidelines, secondary treatment (1982) has been the accepted standard for BOD and TSS removal. It is expected that in the immediate future this trend will continue as indicated by the guidelines promulgated on April 15, 1998.

#### TYPE OF PULPS MADE BY WEYERHAEUSER COMPANY'S COSMOPOLIS MILL

The permittee's past production has been 88.9 percent dissolving grade (acetate (78.7 %), viscose (0%), and cellophane (10.2 %)) and 11.1 % paper grade sulfite pulp. The effluent guidelines have not been promulgated as of this date for dissolving grade pulp made by the sulfite pulping process. The 1998 effluent guidelines added specialty grade pulp as a subcategory of sulfite paper grade. The specialty grade of pulp is in between the former paper grade and dissolving sulfite pulp. The specialty grades sulfite consists of those papergrade sulfite mills where a significant portion of production is characterized by pulp with a high percentage of alpha cellulose and a high brightness sufficient to produce end products such as plastic molding compounds, saturating and laminating products, and photographic papers. The company's revisited the production at the request of Ecology to determine if any of their dissolving pulp fits the definition of the specialty grade paper. The result showed that 30 % of their production fits the specialty grade definition. The other production types are 11 % air laid (paper grade) and 59 percent dissolving grade.

#### DETERMINATION OF AKART FOR CONVENTIONAL POLLUTANTS

The BOD effluent allowances for dissolving acetate grade of pulp promulgated in 1982 were appealed by Weyerhaeuser Company. The company won and the BOD allowances were remanded back to EPA for reconsideration. As of this date, EPA has not acted on these guidelines. The acetate effluent guidelines for BOD can not be used as guidelines to determine the limits for BOD without agreement with the company. However, we are able to use them in the determination of AKART. To do this we compared the type of treatment the wastewater underwent then and now, the load to it, and its capability of meeting the effluent guidelines. We are not able to separate the acetate grade pulp production from the other grades with respect to the treatment system performance. However, we can compare the overall performance of the treatment system with the calculated limits and the 1982 effluent guidelines for the acetate grade pulp included. If the mill can meet the calculated limits at their current production and treatment performance then we can determine that the calculated limits are valid and are reasonable.

In 2001 the company proposed that the allowances for conventional pollutants in the 1982 guidelines be used in the guidelines currently being proposed by EPA. These allowances included the acetate grade allowance. The reasons that the company is now ready to accept the allowance for BOD defined in the 1982 guidelines are as follows: In 1978 when the company appealed, they were bleaching their pulp with elemental chlorine, hypochlorite, and other

chemicals and using an aerated lagoon to treat their wastewater. At present the mill uses Elemental Chlorine Free bleaching (ECF) with oxygen bleaching/delignification to bleach the produced pulp and an activated sludge treatment plant with better operational control to treat their wastewater. Also, with the construction of the COEL project, they reduced the influent BOD into the secondary treatment system by 40,000 lbs./day. The reduction is approximately 33 percent of the influent BOD to the secondary treatment system.

The mill has a limit for the monthly average BOD of 24,537 lbs. BOD/day. They have two limits for the daily maximum BOD. For the daily maximum BOD, the limit is 35,000 lbs. BOD/day if the Chehalis River is less than 2,000 CFS and 45,391 lbs. BOD/day if Chehalis River flow is 2000 CFS or more. For the past two years they have had two excursions above the lower daily maximum when the River flow was less than 2000 CFS. For this time period they have not had any other problems with the higher BOD limit. As before, the company has been in compliance with their TSS limit.

#### DETERMINATION OF AKART FOR ACETATE GRADE PULP

From best professional judgement we used the allowances for conventional pollutants, that is, BOD, TSS, and pH in 1982 guidelines published in 40 CFR Part 430 subpart K for the dissolving grade of pulp. It is further determined by best professional judgement that the allowances for BOD and TSS in the 1982 effluent guidelines for the acetate dissolving sulfite pulp production is equivalent to AKART for the following reasons:

- There were no changes for the conventional pollutants allowances in the new guidelines for the type of pulps made by the mill in the new effluent guidelines promulgated on April 15, 1998.
- Secondary treatment has been and is expected to remain the level of treatment that the effluent guidelines are based on.
- The mill proposed the acetate pulp allowances for BOD in the dissolving pulp subcategory be use in the new effluent guidelines being promulgated by EPA.
- Four other permits have been issued or drafted with the 1982 effluent guidelines being determined to be equivalent to AKART for other categories of pulp production.
- The mill can meet the proposed limits for all conventional pollutants.

## DETERMINATION OF AKART FOR PAPER GRADE PULP

Furthermore, it is determined by best professional judgement that the allowances for BOD and TSS in the 1998 effluent guidelines for the sulfite specialty paper grade and paper grade pulp are equivalent to AKART since the guidelines were published within the last ten years.

We used the guidelines published in 1998 found in 40 CFR Part 430 subpart E, acid sulfite liquor/surface condensers; best practicable control technology currently available (BPT) effluent limitations for papergrade sulfite facilities where vacuum or pressure drums are used to wash pulp allowance for conventional pollutants, that is, BOD, TSS, and pH for the air laid portion of the production. We used 40 CFR 430 subpart E subcategory specialty grade for the 30 % of pulp defined as specialty grade pulp.

## DETERMINATION OF AKART FOR THE BLEACHING PROCESS USED AT THE MILL

EPA has indicated that the effluent guidelines for the dissolving grades pulp mills would not be promulgated until late in 2004 because the Weyerhaeuser Company, Cosmopolis magnesium dissolving sulfite mill is unique. Without the effluent guidelines to help determine the type of process and treatment to be used in defining AKART, Ecology made the AKART determination for the dissolving sulfite pulp production with the aid of the 1998 effluent guidelines for the sulfite and Kraft paper grade, and in consultation with EPA staff at Region X and headquarters.

Available effluent guidelines define best available technology, economically achievable (BAT) for several processes similar, but not identical, to the process used by Weyerhaeuser's Cosmopolis pulp mill. Specialty papergrade (pulp made by sulfite mills with an ISO brightness of 91) mills must use elemental chlorine free bleaching. Other papergrades of pulp made using the sulfite pulping process must use totally chlorine free (TCF) bleaching. Pulp produced at the Weyerhaeuser Cosmopolis mill consists of 30 % specialty grade pulp, 11 % air laid pulp with an ISO brightness of 91, and 59 % dissolving grade. In establishing ECF as a standard for specialty grade pulp, EPA determined that the desired quality of the final product could not be economically achieved by TCF technology. Dissolving grade pulp (almost pure alpha-cellulose) must have fewer impurities than specialty grade, a standard not likely to be achieved with TCF. According to EPA, there are no mills using TCF technology to produce the mix of products produced at the Cosmopolis mill. While no new or untried technology is used to define AKART, Ecology did consider the existing oxygen delignification technology currently in use to supplement ECF. This process helps to reduce the amount of chlorine needed to achieve the desired product quality which, in turn, reduces the amount of chlorinated organics in the final effluent. Therefore, AKART is defined for the Weyerhaeuser Company pulp mill at Cosmopolis, Washington as ECF with oxygen bleaching/delignification for all categories of pulp currently made at the Cosmopolis pulp mill.

The 1998 guidelines specified monitoring and limitations for chlorinated organic compounds including dioxin for the sulfite specialty paper grade pulp made with ECF bleaching. The previous NPDES permit placed a mass limit of 0.28 mg/day on dioxin. This mass limit was derived from a TMDL performed on the receiving water with the non-detect concentration of 10 ppq (picogram/liter) showing compliance. The 0.28 mg/day mass limit requires a concentration

below the detection limit for dioxin. The 1998 guidelines placed a limit of 10 ppq on dioxins and furans (2,3,7,8 TCDD and 2,3,7,8-TCDF) for mills producing specialty grade pulp. The guidelines require compliance at the bleach plant effluent for 2,3,7,8 TCDD and 2,3,7,8-TCDF. We used the 1998 effluent guidelines limit with the non-detect of 10 ppq for 2,3,7,8 TCDD. The waste load allocation (WLA) mass limit is kept in the proposed permit. The compliance point is at the bleach plant effluent. Meeting the nondetect at the bleach plant shows compliance with the final effluent mass limit.

There was no limit for 2,3,7,8-TCDF in the previous permit. The EPA and Weyerhaeuser sampled and analyzed for both 2,3,7,8 TCDD and 2,3,7,8-TCDF in the bleach plant effluent during the sampling for promulgating the sulfite pulping subcategory. Verbal conversations with the EPA indicated that the Weyerhaeuser's pulp mill at Cosmopolis was the best in the sulfite subcategory. At this time the mill cannot meet the nondetect limit of 10 ppq for 2,3,7,8-TCDF at the bleach plant discharge. The 31.9 ppq limit for 2,3,7,8-TCDF in the bleached Kraft paper subcategory is the only other limit for this compound promulgated in the 1998 effluent guidelines. The company can meet the 31.9 ppq limit for 2,3,7,8-TCDF. Therefore, since the company is the best performer of all sulfite mills, the limit of 31.9 ppq for 2,3,7,8-TCDF is placed in the proposed permit with compliance at the bleach plant effluent.

The 1998 effluent guidelines for the specialty grade of pulp production did not place limits on absorbable organic halides (AOX), but reserved a placeholder in the guidelines. The previous permit placed an upper value of less than 1.9 kg AOX/UADMT in the final effluent for AOX for the purpose of showing compliance with 2,3,7,8-dioxin (UADMT is unbleached air metric ton). During four effluent sampling events for different grades of pulp, analyses performed by EPA's consultant (ERG) and the company for AOX in water from the bleach plant effluent showed that the production of AOX for the four tests at the bleach plant were 0.313, 0.835, 0.946, and 1.007 kg AOX/UADMT. The average of these four tests for AOX production was 0.778 kg AOX/UADMT. This average represents the annual average of AOX production at the bleach plant effluent. The 30-day maximum variability factor ( $VF_{30}$ ) for all mills was 1.79 for  $BOD_5$  (Development Document for Effluent Limitations Guidelines and Standards for the Pulp, Paper and Paperboard, October, 1982). Assuming  $VF_{30}$  for AOX is equal to  $VF_{30}$  for  $BOD_5$ , the monthly average limit for AOX with compliance at the bleach plant is equal to  $VF_{30} \bullet$  annual average =  $(1.79 \bullet 0.778 \text{ kg AOX/UADMT})$ , or  $1.39 \text{ kg AOX/UADMT} \approx 1.4 \text{ kg AOX/UADMT}$ . The daily maximum was calculated by multiplying  $1.4 \text{ kg AOX/UADMT}$  by the ratio of the daily maximum AOX effluent allowance to the monthly average AOX effluent allowance from the Kraft paper grade 1998 effluent guidelines, Subpart B, 40 CFR 430.24. Or  $1.39 \text{ kg AOX/UADMT} \bullet (0.951/0.623) = 2.13 \text{ kg AOX/UADMT} \approx 2.1 \text{ kg AOX/UADMT}$ . The compliance point is at the bleach plant.

When the dissolving grade sulfite effluent guidelines are promulgated, Ecology may reopen the permit and modify the limits for AOX. Although the Kraft paper method of production is different than dissolving sulfite pulp production, the bleaching processes are similar since both processes use mostly the same chemicals. Therefore, it is expected that the variability of the AOX production would likewise be similar.

The previous and proposed permits have limits for fecal coliform. Since the effluent is highly colored with light absorbing chemicals, the water has to be disinfected with chlorine containing compounds. Use of any type of light source does not disinfect the effluent because of its absorption by the colored chemicals within the effluent water. In fact it is unknown how much disinfection actually occurs since the final effluent has a high BOD although within the permit limit. AOX can be formed during the disinfection process to control fecal coliform. Therefore, the monitoring requirements for 2,3,7,8 TCDD, 2,3,7,8 TCDF and AOX have been retained in the proposed permit. The frequency is quarterly. Monitoring for 2,3,7,8 TCDD and TCDF in the sludge at the sludge lagoon has been eliminated. In lieu of this, a condition has been placed in the proposed permit requiring the permittee to monitor the secondary sludges for 2,3,7,8 TCDD and 2,3,7,8 TCDF quarterly.

Chlorinated phenolic pollutants limited for the specialty grade papers produced at sulfite mills are as follows:

Compounds	Method	Limit
Trichlorosyringol	1653	< 2.5 µg/L
3,5,6-Trichloroguaiacol	1653	< 5.0 µg/L
3,4,5-Trichlorocatechol	1653	< 2.5 µg/L
3,4,6-Trichlorocatechol	1653	< 2.5 µg/L
3,4,5-Trichloroguaiacol	1653	< 2.5 µg/L
3,4,6-Trichloroguaiacol	1653	< 2.5 µg/L
2,4,5-Trichlorophenol	1653	< 2.5 µg/L
2,4,6-Trichlorophenol	1653	< 2.5 µg/L
Tetrachlorocatechol	1653	< 5.0 µg/L
Tetrachloroguaiacol	1653	< 5.0 µg/L
2,3,4,6-Tetrachlorophenol	1653	< 2.5 µg/L
Pentachlorophenol	1653	< 5.0 µg/L

The mill production consists of a portion of specialty grade, the above limit will be required for all grades of the pulp production. The above chlorinated phenolic pollutants are limited to the detection limit. AKART is defined by these limits for all grades of pulp produced since this is the lowest value for these pollutants that can be shown to be present in any type of pulping system.

The 1998 effluent guidelines did not limit chloroform in the bleach plant effluent. However, the guidelines had placeholder for chloroform. Since, there are little data related to chloroform, a monitoring requirement has been placed in the proposed permit.

#### BEST MANAGEMENT PRACTICES

Since a portion of the Weyerhaeuser Company's pulp production is specialty grade pulp, they are required to follow the requirements of CFR 430.03 for a best management practices (BMPs) for spent pulping liquor management, spill prevention, and control within two years of the effective date of the proposed permit or upon the promulgation of the dissolving sulfite subcategory effluent guidelines, whichever occurs first.

#### TOTAL CHLORINE FREE (TCF) STUDY

Even though AKART is defined as ECF bleaching in this proposed permit, the permittee is required to complete a total chlorine free (TCF) study to fulfill Ecology's commitment to determine if further reduction of chlorinated organic chemicals is reasonable.

#### *SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS*

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge meets established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Surface water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin wide total maximum daily loading study (TMDL).

#### NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the State of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

#### NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The U.S. EPA has promulgated 91 numeric water quality criteria for the protection of human health that are applicable to Washington State (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

## NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the State of Washington.

## ANTIDegradation

The State of Washington's Antidegradation Policy requires that discharges into receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of the receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of the receiving water are of higher quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

## CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

## MIXING ZONES

The Water Quality Standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

## DESCRIPTION OF THE RECEIVING WATER

The facility discharges to the Grays Harbor (Outfall 001) designated as a Class B marine water and the Chehalis River (Outfall 002) designated a Class A fresh waters respectively in the vicinity of the respective outfall. Other nearby point source outfalls includes the City of Hoquiam, Grays Harbor Paper Company, and the City of Aberdeen. Significant nearby non-point sources of pollutants includes log yards, stormwater discharges from Aberdeen and Hoquiam, farming and cattle ranches up river. Characteristic uses include the following: water



supply (industrial, agricultural); stock watering; fish migration; fish and shellfish rearing, spawning and commercial harvesting; wildlife habitat; secondary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation. Water quality of this class shall meet or exceed the requirements for most uses.

#### SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for this discharge are summarized below for the marine waters:

Fecal Coliforms	100 colonies/100 mL maximum geometric mean and not have more than 10 % of the all samples obtained for calculating the geometric mean value exceeding 200 colonies/100 mL
Dissolved Oxygen	5 mg/L minimum
Temperature	19 degrees Celsius maximum
pH	7.0 to 8.5 standard units
Turbidity	less than 10 NTU above background
Toxics	No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)

and below for the freshwater:

Fecal Coliforms	100 colonies/100 mL maximum geometric mean and not have more than 10 % of the all samples obtained for calculating the geometric mean value exceeding 200 colonies/100 mL
Dissolved Oxygen	8 mg/L minimum
Temperature	18 degrees Celsius maximum
pH	6.5 to 8.5 standard units
Turbidity	less than 10 NTU above background
Toxics	No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)

#### CONSIDERATION OF SURFACE WATER QUALITY-BASED LIMITS FOR NUMERIC CRITERIA

If any pollutant concentrations in the proposed discharges exceed water quality criteria with technology-based controls that the Department has determined to be AKART a mixing zone is authorized in accordance with the geometric configuration, flow restriction, and other restrictions for mixing zones in chapter 173-201A WAC and is defined as follows for outfall 001: The chronic dilution zone is 210 feet upstream and downstream of the diffuser except for the fecal

coliform extended mixing zone. For fecal coliform the extended mixing zone is 1300 meters (4300 feet). The acute mixing zone is 21 feet upstream and downstream of the diffuser.

The dilution factors of effluent to receiving water that occur within these zones have been determined at the critical condition by the use of UDKHDEN computer model:

	Acute	Chronic	Extended
	Percentile receiving water speed		
	50 percentile	50 percentile (farfield)	
Aquatic Life	9:1	74:1	83:1
Human Health, Carcinogen		74:1	
Human Health, Non-carcinogen		74:1	
Extended mixing factor			250:1

The dilution ratio of 74:1 was used in the reasonable potential for chronic water quality and 83:1 for health quality criteria and temperature. The company re-evaluated the dispersion factor and the tidal averaging used in the mathematical model to obtain the 83:1 dilution ratio. The dilution ratio of 83:1 was used for the temperature criteria. The acute factor is used to determine the ACEC and the 50 percentile (farfield) is used to determine the CCEC.

For outfall 002 the chronic dilution zone is 210 feet and the acute mixing zone is 21 feet upstream and downstream of the discharge point. The dilution factors for the acute and chronic dilution factors are 4:1 and 34:1, respectively.

Pollutants in an effluent may affect the aquatic environment near the point of discharge (near field) or at a considerable distance from the point of discharge (far field). Toxic pollutants, for example, are near-field pollutants--their adverse effects diminish rapidly with mixing in the receiving water. Conversely, a pollutant such as BOD is a far-field pollutant whose adverse effect occurs away from the discharge even after dilution has occurred. Thus, the method of calculating surface water quality-based effluent limits varies with the point at which the pollutant has its maximum effect.

The derivation of surface water quality-based limits also takes into account the variability of the pollutant concentrations in both the effluent and the receiving water.

#### FECAL COLIFORM EXTENDED MIXING ZONE

#### Mill's fecal coliform history

In the early 1990's, Weyerhaeuser converted to ECF bleaching with oxygen delignification and stopped controlling fecal coliform with low pH of about three in response to an order issued by Ecology. At that time, they started controlling fecal coliform by chlorination of the final

effluent. Since the treated wastewater is highly colored and has a very large oxidation demand, the only method of disinfection is with chlorine containing compounds. Even with chlorinating the effluent with high doses of chlorine compounds, they cannot meet the current fecal coliform limit imposed by the 1991 NPDES permit on a continuous basis.

### **The studies**

In 2002 the Weyerhaeuser initiated a comprehensive bacteria die-off study and ran a sophisticated hydrodynamic model to determine the fate of the bacteria in their effluent after being discharged into the receiving water.

The die-off study was performed by IEH, Inc. The dilution water for the study was obtained from Grays Harbor. The bacteria were harvested from Weyerhaeuser Company wastewater treatment effluent at Cosmopolis. The study showed that about fifty percent of the bacteria died in the first few second after introduction of the bacteria into waters that was near the conditions of the receiving waters. The bacteria continued to expire after the initial die-off.

The hydrodynamic and water quality modelings were conducted by CH2Mill Hill, Inc with the use of the die-off results. The chosen model (ADCIRC) was from the U S Army Corps of Engineers (ACOE). The model is the state of-the-art- formulation designed for complex system like Grays Harbor. The transport (water quality) model used in the study was RM4A also developed by ACOE. The model showed that the higher fecal coliform counts could be discharged without exceeding the water quality criteria at the A/B boundary than are in the proposed in the permit. The model also showed that the wastewater would not reach the sanitary boundary in one tidal cycle.

These documents can be found on the web at: <http://www.ecy.wa.gov/industrial/proposed.asp>. The above web site is where the permit and factsheet can be found.

### **Limiting case**

After the company performed a sophisticated hydrodynamic modeling of Grays Harbor, a die-off study of the fecal coliform in the effluent, and water quality modeling of Grays Harbor, Ecology determined that the Class B marine waters at the point of discharge of the treated process wastewater was the limiting factor to the value of the fecal coliform limit in the proposed permit.

**Request for extended mixing zone**

Weyerhaeuser Company's pulp mill conducted a series of study to determine the fate of fecal coliform bacteria in the receiving waters. These studies can be found on the Industrial Section web page with the factsheet and permit. Based on these studies, Ecology has determined that an extended mixing zone is granted for fecal coliform as allowed by WAC 173-201A-100(12); that is, they requested an extended mixing zone. The extended zone only applies to fecal coliform.

**Regulations governing extended mixing zone**

Chapter 173.201A allows an extended mixing zone in certain cases described below. The extension of the chronic mixing zone boundary is allowed by WAC 173-201A-100(12) in the following cases:

1. The discharge was in existence prior to November 24, 1992.
2. Where altering the size configuration is expected to result in greater protection to the existing and characteristic uses.
3. Flow augmentation
4. Where the exceedance is clearly necessary to accommodate important economic or social development in the area in which the waters are located.

Item number three relates to flow augmentation and is not applicable to the receiving water at the company discharge point. All of the other items are applicable to the discharge. The mill was discharging prior to November 24, 1992. Reducing the amount of chlorine used in disinfection reduces a broad category of chlorinated organic compounds, thereby protecting the beneficial uses of the Chehalis River and Grays Harbor from these chlorinated organic chemicals. The company estimates that they spend 1 to 3 million dollars a year on disinfection. Therefore, with this extension of the chronic mixing zone the company will be more viable over the long term and the water quality will be enhanced.

**Other conditions must be met for allowing an extended dilution zone**

In order to grant the extended mixing zones WAC 173-201A(13) must also be met. WAC 173-201A-100(13)(a) states that AKART appropriate to the discharge is being fully applied. There are no other ways to control fecal coliform better than chlorine containing compounds for this wastewater since the effluent has a very high potential to absorb any and all types of radiation. Another method of fecal coliform control is to introduce acid into the effluent at the mill. If pH is on the order of 3 SU, fecal coliform bacteria do not bloom in the transmittal to the outfall. However, before the water is discharge, a strong base must be added to neutralize the acidic water. This method is very expensive and can be unreasonable. Therefore, lowering the pH is not economically feasible on a continuous basis. Therefore, chlorine containing compounds are more economical but the negative impacts of generating AOX may out weigh the positive results of controlling fecal coliform. Therefore, it is determined that AKART is being fully applied for the wastewater treatment plant.

WAC 173-201A-100(13)(b) states: All siting, technological, and managerial options which would result in closer compliance that are economically achievable are being utilized. The company has investigated many options and has not found one that would ensure complete compliance. This even includes the chlorination type of disinfection. The use of break point chlorination is prohibitively costly and would produce large amounts of chlorinated organic compounds. All siting, technological, and managerial options have been applied without the permittee being in continuous compliance.

WAC 173-201A-100(13)(c) states: The proposed mixing zone complies with subsection (4) of this section. WAC 173-201A-100(4) states: Mixing zones shall be granted only if the supporting information clearly indicates that the mixing zone would not have a reasonable potential to cause a loss of sensitive or important habitat, substantially interfere with the existing or characteristic uses of the water body, result in damage to the ecosystem, or adversely affect public health as determined by the department. There is very little opportunity for human contact with the water in this area; therefore, contact with any pathogens is very unlikely. The company conducted a study to evaluate whether the bacteria found in their effluent contained pathogens. The study (See Appendix 7 of the Die-off Study, IEH, 2002) showed that of the pathogens tested for none were found. Therefore, the risk is even lower for human contact with any pathogens. The criteria for Class B marine water at the edge of the extended mixing zone for fecal coliform is met as well as the water quality criteria at the A/B boundary ( See Hydrodynamic Modeling, CH2MHill, 2002). The supporting information indicates that the extended mixing zone would not impair either the Class B marine water outside the allowed mixing zone or the Class A marine waters existing characteristic uses. The granting of the extended mixing zone would not impact sensitive or important habitat.

### **The studies results used in the proposed permit**

The IEH 2002 die-off study determined the initial die-off factor and the decay rate. The die-off study showed that about 53 percent of the fecal coliform organisms died in the first few seconds or the survival was 47 percent. The other part of the die-off of fecal coliform is the first order decay once the initial die-off time has passed. The first order decay is denoted as the timed die-off. The survival rate depends on the size of the mixing zone and the ambient velocity.

The sophisticated hydrodynamic modeling and water quality modeling of Grays Harbor (CH2MHill, 2002) showed that a larger amount of fecal coliform could be discharged without exceeding the A/B boundary fecal coliform value of 14 colony per 100 mL and 43 colonies per 100 mL. than the value determined that could be discharge and meet the Class B marine value of 100/200 colony per 100 mL. The A/B boundary is close to the sanitary line used by the DOH to set limitations of where commercial oysters can be safely harvested.

### **The extended dilution zone for fecal coliform only**

WAC 173-201A-100(12) does not define how to determine the extended mixing zone boundary or the dilution factor. WAC 173-201A-100(6) requires that any mixing zone size and dilution factor be minimized. It is apparent that both should be based on performance since the purpose

for an extended mixing zone is compliance in cases where the Permittee can not meet their limit set by a normal mixing zone.

As mentioned earlier, AOX compounds are generated during disinfection with chlorine. The effluent color prevents using any form of light as a disinfectant. Chlorine is the disinfectant of necessity but is very inefficient because of the high chlorine demand of the discharge. Partial disinfection with chlorine is very costly. Disinfection with chlorine increases production costs at the mill with little, or even negative, environmental effects. Minimization of chlorine would reduce the production costs at the mill and would reduce the amount of AOX compounds discharged. Ecology has investigated the possibility of minimizing chlorine usage at the mill by extending the dilution zone. It is estimated that AOX could be reduced by 30 percent if the company did not have to disinfect with chlorine.

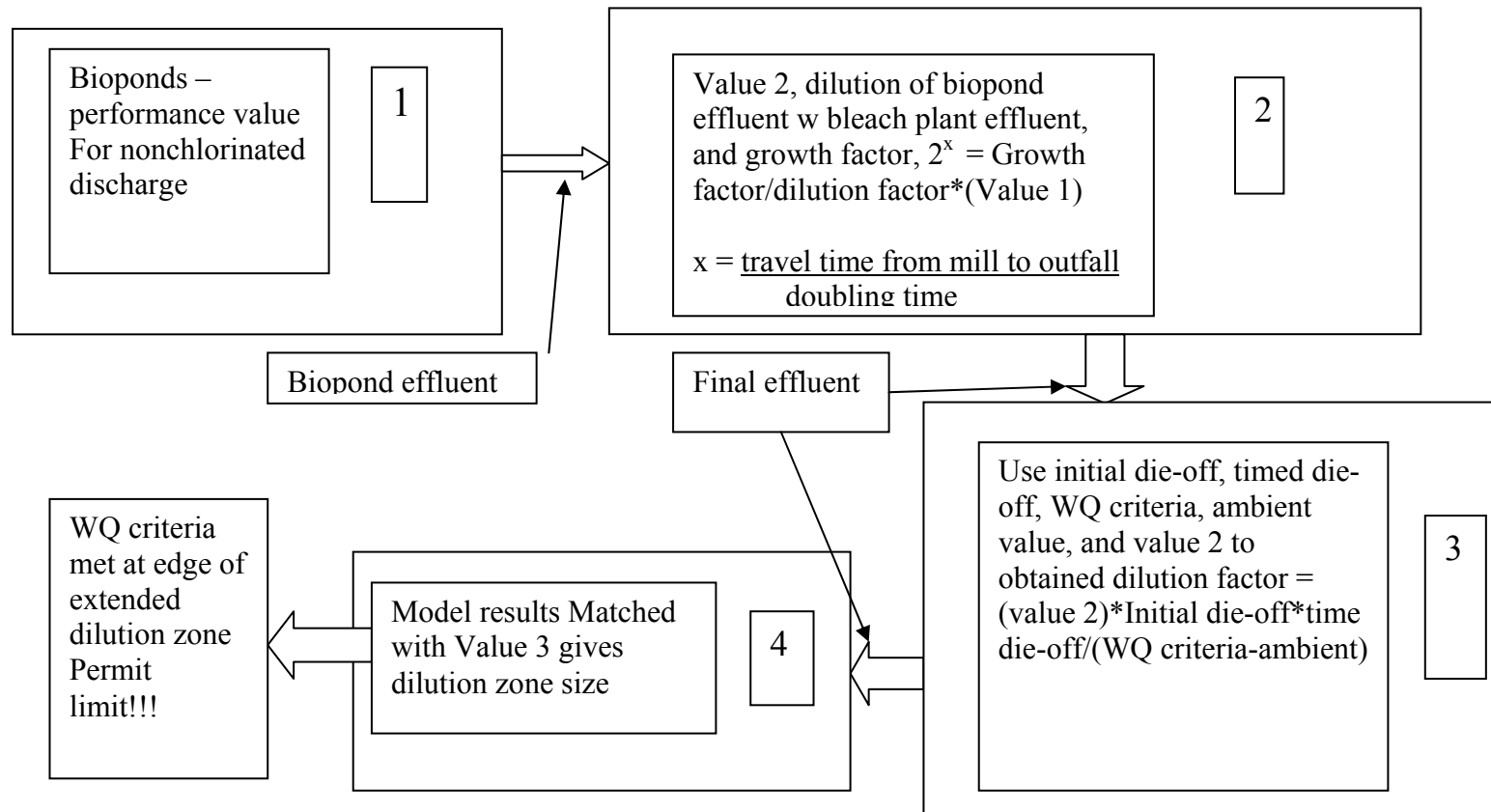
A performance based limit would typically be developed from effluent data for fecal coliform when the mill was not disinfecting the effluent. This is not possible since there would be a high probability that the permittee would be out of compliance with their fecal coliform limit in the current NPDES permit. In fact there are no unchlorinated coliform data for the final effluent. However, there are unchlorinated coliform data for the biopond effluent. A fair performance based unchlorinated final effluent coliform limit can be obtained by using the unchlorinated coliform data from the biopond with allowances for dilution and regrowth in the wastewater line from the mill to the final discharge point. The final effluent coliform limit includes initial die-off, die-off over time, water quality criteria, and ambient coliform. These values were used to determine the dilution ratio factor required at the edge of the extended mixing zone for permit compliance. Then the dilution factor was matched with the model results to determine the mixing zone dimensions.

The above scenario meets the Class B marine water quality criteria at the edge of the extended mixing zone and meets the water quality standards at the Class A/B boundary. The Class B water quality criteria are met because the calculations were set up to meet it at the proposed permit limit. The criteria at the A/B boundary are met according to the hydrodynamical model performed by the permittee's consultants. The DOH will make the decision on the limit that protects the oyster beds using the die-off study and the hydrodynamic modeling done by Weyerhaeuser consultants. Characteristic uses are expected to remain the same in both the Class A and Class B waters. No impairment of public health is expected. The oyster beds may be closed from time to time. However, the frequency is expected to decrease. The permit requires the permittee to notify the DOH if they exceed the trigger set to close the oyster bed.

### **Permit limits**

The following block diagram shows the procedure used for determining the size of the extended mixing zone and the dilution factor. The data used to determine the performance of the bioponds for fecal coliform (measured by the membrane filter method) were supplied by the permittee and include data from 1996 to 2002. The fecal coliform tests were conducted almost on a daily basis except during mill shutdowns. Close examination of the data showed that at least three times after the mill started up immediately after a shutdown, the fecal coliform

values were extremely high. These high values were due to the mixing of the solids left in the bioponds with the mill's process wastewater. Ecology considers the startup after mill shutdown to be abnormal because these high values are not related to normal performance of the biopond to discharge fecal coliform. All data for 30 days after each startup from the shutdown of the mill were eliminated from the data set. This was done to get a fair representation of the bioponds' performance under normal conditions.





A histogram was done on the remaining data and the 95<sup>th</sup> and 99<sup>th</sup> percentile were obtained from the data set. These values are the numbers derived in Block 1 of the schematic above.

The data used to obtain the numbers in Block 2 and Block 3 of the schematic is given in the following table.

Parameter	Value
Initial survival factor	0.47
Decay constant (day <sup>-1</sup> )	3.18/day
Ambient fecal (count/100 ml)	12
Water quality criteria fecal (count/100 ml)	200
Biopond flow (MGD)	3.1
Final effluent Flow (MGD)	23.1
Diameter of line from mill to outfall (inches)	42
Doubling time (minutes)*	34
Volume of pipes and structures from mill to fecal sampling point (MG)	1.75

\*The doubling time for E Coli is 17 minutes under ideal conditions. The wastewater in the pipes and structures going from the mill to the fecal coliform sampling point is fairly close to ideal conditions for growing bacteria. The effluent contains many different types of fecal coliform. In order to be conservative, we have increased the doubling time by a factor of 2 or the doubling time is 34 minutes. One reason for increasing the doubling time is that the line from the mill to the sampling point was considered to be flowing full. Since the flow is propelled by gravity, the line would not be expected to be full. Therefore, the time estimated for the water to go from the mill to the sampling point would be shorter. With a shorter time, the bacteria would not double as many times.

The dilution ratio at the edge of the extended mixing zone is 250:1 and the size is 1300 meters (4300 feet) up and down stream from the diffuser. The limit derived by the performance method above is that the monthly geometric mean must be less than or equal to 42,000 colonies/100 mL with no more than 10 percent of those samples used in determining the geometric mean being greater than 128,000 colonies/100 mL. Even with the extended mixing zone the permittee may have to disinfect their effluent with chlorine compounds and/or reduce the pH during certain times when the wastewater treatment system is going through upset conditions with respect to fecal coliform. However, with the extended mixing zone they may use less chlorine containing chemicals thus reducing the production of AOX. If the fecal coliform found in the discharge is above the Department of Health closure criteria but below the proposed permit limit on a continuing basis and the oyster growers are impacted; Ecology may choose to reopen the permit or issue an administrative order to reduce the proposed fecal coliform limit.

**Weyerhaeuser's proposed water quality based limit**

The company proposed the following methodology for calculating of water quality based fecal coliform effluent limitations the draft NPDES permit.

Using an average dilution of 350 and accounting for initial mortality and first order decay at a rate of 3.18 per day, the maximum daily effluent limit was calculated to be 182,000 org / 100 ml and the average monthly effluent limit was calculated to be 85,000 org / 100 ml. These effluent limits were derived comparing measured river flows and effluent plume travel time and concentrations to a hydrodynamic model developed to understand the fate and transport of fecal coliform in the Grays Harbor estuary.

These proposed limits assure that with a 99% confidence interval that effluent fecal coliform concentrations will comply with the 200 org/100 ml Class B Water Quality standard at the boundary of a 3000 meter extended mixing zone.

**The chosen methodology**

After review of the fecal coliform methodology suggested by Weyerhaeuser, Ecology decided to use performance method in the proposed permit for the following reasons:

1. Although the Weyerhaeuser's dilution zone is based on water quality, their method does not minimize the size of the dilution zone required by WAC 173-201A-100(6).
2. The Weyerhaeuser proposed dilution zone would be almost twice that of Ecology dilution zone.
3. The Weyerhaeuser dilution zone would extend beyond Rennie Island in both directions.
4. The Weyerhaeuser dilution zone would be almost twice that allowed by NPDES permit for marine water issued by EPA in Alaska (<http://yosemite.epa.gov/r10/water.NSF/> then to permit then to recently issued permits then to recently issued NPDES permits in Alaska then to individual permits, Skagway's factsheet page 19).
5. Ecology's dilution methodology is tied to performance of the mill wastewater treatment system excluding each thirty days startup periods after mill shutdowns when the fecal count can be extremely high.
6. Ecology's methodology is more conservative. The water quality criteria are met closer to the point of discharge with Ecology methodology.
7. Almost the same method of operations could be used to meet the permit limits calculated by either methodology.

**Total maximum daily load**

The proposed bacteria permit limits have also been evaluated for their consistency with the Grays Harbor/Chehalis Watershed Fecal Coliform Bacteria TMDL. December 2002. This public review process for the Weyerhaeuser draft permit serves also as the public review period for a modified higher TMDL fecal coliform (FC) bacteria wasteload allocation (WLA). The new WLA being proposed is consistent with the proposed permit limits for bacteria.

The higher WLA is supported by science showing it is protective of water quality. The water quality outcomes provided by the existing TMDL would be met at the edge of the mixing zone allowed in the proposed permit. Additionally, the Weyerhaeuser's facility has a very small effect on the overall TMDL load to Grays Harbor.

- The original Weyerhaeuser WLA contributes less than 4% of the total TMDL bacteria load. Changing it has little effect on the overall Grays Harbor load calculations and resulting WLA's and non-point pollution source load allocations (LA's), given improved information about bacterial die-off in the Weyerhaeuser's mixing zone.
- About 95% of the total bacteria load to the harbor is still non-point. Cleanup strategies and overall implementation are therefore largely unaffected by a change to the Weyerhaeuser WLA.
- The TMDL found that LA's for non-point sources were mostly limited by needing to meet state fresh water quality standards. The only areas where the LA's were limited by needing to meet marine water quality standards in Grays Harbor were the Humptulips River, Elk River, and Andrews Creek. These three exceptions were localized in regions of Grays Harbor that are a large distance from the Weyerhaeuser's facility and will not be influenced by the changes in the proposed permit because of rapid die-off rates of bacteria from the distant sources.
- The modified WLA would only increase loading to the mixing zone around the facility. Capacity exists in Grays Harbor to absorb the higher loading from this modified WLA.

### **Best management plan to control fecal coliform**

During startup of the wastewater treatment system and of the mill, the permittee fills the bioponds with fresh water before adding wastewater. Starting the bioponds with wastewater, cause odors to be generated in the pond by anaerobic decomposition of the wastewater and high fecal counts in the effluent from the bioponds. To prevent odors and high fecal count, the permittee may pump fresh water from the earth settling area near the bioponds preceding outfall 002 as needed before adding wastewater to any biopond at any time. The location of the pumps will be confined to the permittee's property and primary treatment system. The water so pumped will be discharged via outfall 001 instead of outfall 002. The amount of the water is insignificant as compared to the water normally discharged by either outfall 001 and/or outfall 002.

### **WATER QUALITY ANALYSES OUTFALL 001**

BOD<sub>5</sub>--Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters. Therefore, the technology-based effluent limitation for BOD<sub>5</sub> was placed in the permit. The BOD limits in the current permit were placed in the permit after a dissolved oxygen study was done while Rayonier, Inc. was operating and discharging wastewater with a high BOD. Since the study was done, Rayonier, Inc. has ceased operating the pulp mill at Hoquiam, Washington. At this time the Grays Harbor Paper Company, LTD operates the paper mill. The main difference is that presently, the BOD limits for the paper mill is about 25 percent of the pulp and paper mill limit during Rayonier, Inc. tenure. The Weyerhaeuser's permit that is

in effect at this time has two limits for BOD daily maximum. These limits are as follows: (1) 35,000 pounds BOD/day if the daily average river flow is 2000 cfs or less and (2) 45,391 pounds BOD/day if the daily average river flow is greater than 2,000 cfs. Weyerhaeuser outfall 001 is located in the south channel and Grays Harbor Paper Company, LP is located in the North Channel. The two channels come together near the point of discharge during high tide. The dissolved oxygen was monitored down stream of the outfalls for many years without showing any depressions. With the reduction in the BOD load due to the closing of the pulp mill at Hoquiam, Washington and no measured dissolved oxygen depression, the proposed permit imposes only the technology limit independent of flow.

Temperature--The impact of the discharge on the temperature of the receiving water was modeled by simple mixing analysis at the critical condition. The receiving water temperature at the critical condition is 19.0°C and the effluent temperature is 31.2 °C. The predicted resultant temperature at the boundary of the chronic mixing zone is 19.17 °C at ebb tide and 19.15 °C at flood tide. The temperature criteria are treated as a chronic criterion using the 50-percentile velocity of the receiving water current speed over one tidal cycle. Ecology approved treating temperature as a chronic criterion with the use of 50th percentile current velocity. The analyses of acute effects showed that salmonid smolts are not adversely affected by the short term increase in temperature within the receiving waters. Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters for temperature. Therefore, no effluent limitation for temperature was placed in the proposed permit. The permittee is required to monitor and report the daily maximum temperature of the effluent on the monthly discharge monitoring reports.

pH--Because of the high buffering capacity of marine water, compliance with the technology-based limits of 5 to 9 assures compliance with the Water Quality Standards for Surface Waters. The 1 SU exceptions to the pH in the current permit is placed in the proposed permit with the current permit time limitation.

Turbidity--The impact of turbidity was evaluated based on the range of turbidity in the effluent and turbidity of the receiving water. Due to the large degree of dilution, it was determined that the turbidity criteria would not be violated outside the designated mixing zone.

Toxic Pollutants--Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

The determination of the reasonable potential for copper, zinc, phenol, dioxin, and chloroform to exceed the water quality criteria was evaluated with procedures given in EPA, 1991 (Appendix C) at the critical condition. All of the detected chemicals met the water quality criteria. The dioxin was below the detection limit. The reasonable potential for copper was performed using the river samples taken by Grays Harbor Paper, L. P. in 2000 for dissolved copper and Weyerhaeuser Company data for dissolved copper August 1994. The proposed permit has a

waste load allocation limit for dioxin, a nondetected chemical species. The limit for dioxin at the bleach plant placed in the proposed permit fulfills the WLA for dioxin.

#### WHOLE EFFLUENT TOXICITY

The previous permit required the permittee to perform an acute and chronic characterization of their effluent. The last WET testing for the acute and chronic tests species was performed about 10 years ago. Because the WET rule has changed, the dilution factor has changed, and the mill processes have changed, the permittee is required to re-characterize their effluent in the proposed permit for both outfalls.

#### HUMAN HEALTH

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992). The Department has determined that the applicant's discharge does not contain chemicals of concern based on existing data or knowledge. The discharge will be re-evaluated for impacts to human health at the next permit reissuance.

A determination of the discharge's potential to cause an exceedance of the water quality standards was conducted as required by 40 CFR 122.44(d). The reasonable potential determination was evaluated with procedures given in the Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-001) and the Department's Permit Writer's Manual (Ecology Publication 92-109, July, 1994). The determination indicated that the discharge has no reasonable potential to cause a violation of water quality standards, thus an effluent limit is not warranted. The dioxin and furan limits are technology limitations.

#### SEDIMENT QUALITY

The Department has determined that this discharge has a low potential to cause a violation of the sediment quality standards based on a screening-level evaluation of the discharge(s) that shows the potential to cause sediment contamination is unlikely. Therefore, no sediment monitoring is required.

*PREVIOUS LIMITATIONS FOR OUTFALL 002*

Stormwater, fresh water-treatment-system-backwash, and freshwater overflow are discharged through Outfall 002. The previous permit had the following limitations:

**EFFLUENT LIMITATIONS: OUTFALL # 002**

<b>Parameter</b>	<b>Minimum</b>	<b>Maximum</b>
pH	5 SU - 1 SU for $\leq 60$ minutes <sup>2</sup>	9.0 SU + 1 SU for $\leq 60$ minutes <sup>2</sup>
<b>Parameter</b>	<b>Monthly Average</b>	<b>Daily Maximum</b>
Biochemical oxygen demand (BOD <sub>5</sub> )	-	500 Lbs./day
Oil and grease	10 mg/L	15 mg/L
Fecal coliform	5,000 #/100 mL.	20,000 #/100 mL.

All of these limits are kept in the proposed permit except the fecal coliform. With a dilution factor of 34:1, the in stream fecal count of 12 colonies/ 100 mL, the water quality criteria for fresh water, and the die-off factor, i.e. 53 %, the fecal limitation is as indicated below. Since the stormwater collected and discharged through outfall 002 receives primary treatment and is limited by the above limitations. No further limitations or studies are required by the proposed permit except WET testing. The proposed limit for fecal coliform in the proposed permit is

<b>Parameter</b>	<b>Average Monthly</b>	<b>Maximum Daily</b>
Fecal coliform*	6,000 #/100 mL.	-

\*With no more than 10 % of the sample used in calculating the geometric monthly mean to exceed 14,000 #/100 mL.

*GROUND WATER QUALITY LIMITATIONS*

The Department has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect beneficial uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

This Permittee has the potential to discharge to groundwater from the bioponds. However, the ponds are close to surface waters that discharged into the permittee receiving waters. If the water in the bioponds discharged into ground water, the water would end up in the receiving water. Therefore, no limitations are required based on potential effects to ground water. The solid waste landfills near pond D are regulated by the county.

*COMPARISON OF EFFLUENT LIMITS WITH THE EXISTING PERMIT ISSUED May 5, 1991*

	Existing Limits	Proposed Limits
<b>BOD<sub>5</sub></b>		
Monthly Average	24,537 lbs./day	23,800 lbs./day
<b>Daily Maximum</b>		
w. flow > 2000 cfs	45,391 lbs./day	45,800 lbs./day
w. flow < 2000 cfs	35,000 lbs./day	-
<b>TSS</b>		
Monthly Average	36,094 lbs./day	36,100 lbs./day
Daily Maximum	66,993 lbs./day	67,000 lbs./day
<b>Fecal coliform</b>		
Monthly Geometric mean	5,000 count /100 ML	42,000 count /100 ML <sup>1</sup>
Daily Maximum	20,000 count /100 ML	-
<b>pH</b>		
Minimum w. exception	5 SU - 1 SU for ≤ 60 minutes <sup>2</sup>	5 SU - 1 SU for ≤ 60 minutes <sup>2</sup>
Maximum w. exception	9 SU + 1 SU for ≤ 60 minutes <sup>2</sup>	9 SU + 1 SU for ≤ 60 minutes <sup>2</sup>
Dioxin <sup>3</sup>	0.28 mg/day	10 ppq at Bleach plant effluent
2,3,7,8-TCDF	None	31.9 ppq at Bleach plant effluent
AOX <sup>4</sup>	Compliance for 2,3,7,8, TCDD	1.4 kg/ADMT at Bleach plant
12 chlorinated phenolics	None	DL at Bleach plant effluent
<sup>1</sup> With no more than 10 percent of the samples used in calculating the monthly geometric mean to exceed 128,000 count/100 mL. <sup>2</sup> Total exceptions ≤ 7 hours 26 minutes per month <sup>3</sup> Compliance Nondetect at 10 ppq at final effluent <sup>4</sup> AOX ≤ 1.9 kg/ADMT at final effluent. AOX values were reported as kg of AOX per air dried metric ton of brownstock pulp. Brownstock pulp was defined as off-the-machine production multiplied by 1.1.		

## **MONITORING REQUIREMENTS**

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved. The monitoring schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

Monitoring of the required parameters may be suspended during mill outages provided the reduced monitoring schedule is approved in advance by the Department.

In the previous permit Special Condition S6 (VI) required the permittee to perform biweekly monitoring of the receiving water for flow, temperature, pH, Secchi disk, salinity, dissolved oxygen, and fecal coliform. The initial river survey was required in 1962 because of low dissolved oxygen in the receiving water below the Rayonier's, Inc. and the Weyerhaeuser Company's outfalls. The total waste load allocation for both mills was set at 80,000 pound BOD/day. Since 1962 Weyerhaeuser has attained secondary treatment and Rayonier, Inc. has ceased operation. The maximum load allowed by the permit for Grays Harbor Paper, L.P. (Rayonier, Inc. site) is about 25 percent the previous permit limit. Monitoring for dissolved oxygen has been performed weekly for over 35 years. For the past 10 years there have only been two occurrence of violation of the water quality criteria of 5 ppm in the receiving water. These two occurrences were due to upwelling of oceanic water into the Grays Harbor. Because the dissolved oxygen has not been a problem in the past ten years due to the discharge, the BOD<sub>5</sub> has been drastically reduced compared to the raw discharges at the time the survey was initiated, and the data is not useful, the river survey requirement has been taken out of the permit.

## **LAB ACCREDITATION**

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories*. The laboratory at this facility is accredited for: BOD, Fecal coliform membrane and MPN, pH, TSS, and dissolved oxygen membrane and Winkler methods.

## **OTHER PERMIT CONDITIONS**

### ***REPORTING AND RECORDKEEPING***

The conditions of S3. are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

### ***NON-ROUTINE AND UNANTICIPATED DISCHARGES***

Occasionally, this facility may generate wastewater which is not characterized in their permit application because it is not a routine discharge and was not anticipated at the time of application. These typically are waters used to pressure test storage tanks or fire water systems or leaks from drinking water systems. These are typically clean wastewaters but may be



contaminated with pollutants. The permit contains an authorization for non-routine and unanticipated discharges. The permit requires a characterization of these wastewaters for pollutants and examination of the opportunities for reuse. Depending on the nature and extent of pollutants in this wastewater and opportunities for reuse, Ecology may authorize a direct discharge via the process wastewater outfall or through a stormwater outfall for clean water, require the wastewater to be placed through the facilities wastewater treatment process or require the water to be reused.

#### *SPILL PLAN*

The Department has determined that the Permittee stores a quantity of chemicals that have the potential to cause water pollution if accidentally released. The Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080. The Permittee has developed a plan for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs. The proposed permit requires the Permittee to update this plan and submit it to the Department.

#### *SOLID WASTE PLAN*

The Department has determined that the Permittee has a potential to cause pollution of the waters of the state from leachate of solid waste. This proposed permit requires, under the authority of RCW 90.48.080, that the Permittee update the solid waste plan designed to prevent solid waste from causing pollution of the waters of the state. The plan must be submitted to the local permitting agency for approval, if necessary, and to the Department.

#### *OUTFALL EVALUATION*

Proposed permit requires the Permittee to conduct an outfall inspection and submit a report detailing the findings of that inspection. The purpose of the inspection is to determine the condition of the discharge pipe and diffusers and to evaluate the extent of sediment accumulations in the vicinity of the outfall.

#### *TREATMENT SYSTEM OPERATING PLAN*

In accordance with state and federal regulations, the Permittee is required to take all reasonable steps to properly operate and maintain the treatment system (40 CFR 122.41(e)) and WAC 173-220-150 (1)(g). It has been determined that the implementation of the procedures in the Treatment System Operating Plan is a reasonable measure to ensure compliance with the terms and limitations in the permit. The permittee has submitted the Treatment System Operating Plan. The permit requires that the plan be updated.

#### *GENERAL CONDITIONS*

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual industrial NPDES permits issued by the Department.

## PERMIT ISSUANCE PROCEDURES

### *PERMIT MODIFICATIONS*

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards for Surface Waters, Sediment Quality Standards, or Water Quality Standards for Ground Waters, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

### *RECOMMENDATION FOR PERMIT ISSUANCE*

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, protect human health, aquatic life, and the beneficial uses of waters of the State of Washington. The Department proposes that this proposed permit be issued for 5 years.

## REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.

1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.

1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.

1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Tsivoglou, E.C., and J.R. Wallace.

1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

1994. Permit Writer's Manual. Publication Number 92-109

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(EE2). (Cited in EPA 1985 op.cit.)

## **APPENDIX A--PUBLIC INVOLVEMENT INFORMATION**

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations, which are described in the rest of this fact sheet.

The Department has published a Public Notice of Draft (PNOD) on April 9, 2003 in Daily World to inform the public that the draft permit and the factsheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Don Nelson  
Industrial Section  
Department of Ecology  
P. O. Box 47706  
Olympia, WA 98504-7706

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the sixty (60) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within sixty (60) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, 360-407-6940, or by writing to the address listed above.

The permit and the factsheet were written by Don Nelson.

**APPENDIX B--GLOSSARY**

**Acute Toxicity**--The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

**AKART**-- An acronym for "all known, available, and reasonable methods of treatment".

**Ambient Water Quality**--The existing environmental condition of the water in a receiving water body.

**Ammonia**--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

**Average Monthly Discharge Limitation** --The average of the measured values obtained over a calendar month's time.

**Best Management Practices (BMPs)**--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

**BOD<sub>5</sub>**--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD<sub>5</sub> is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

**Bypass**--The intentional diversion of waste streams from any portion of a treatment facility.

**Chlorine**--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

**Chronic Toxicity**--The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

**Clean Water Act (CWA)**--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

**Compliance Inspection - Without Sampling**--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

**Compliance Inspection - With Sampling**--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

**Composite Sample**--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

**Construction Activity**--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

**Continuous Monitoring** --Uninterrupted, unless otherwise noted in the permit.

**Critical Condition**--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

**Dilution Factor**--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

**Engineering Report**--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

**Fecal Coliform Bacteria**--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

**Grab Sample**--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

**Industrial Wastewater**--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

**Major Facility**--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

**Maximum Daily Discharge Limitation**--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

**Method Detection Level (MDL)**--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

**Minor Facility**--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

**Mixing Zone**--An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (Chapter 173-201A WAC).

**National Pollutant Discharge Elimination System (NPDES)**--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

**pH**--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

**Quantitation Level (QL)**-- A calculated value five times the MDL (method detection level).

**Responsible Corporate Officer**-- A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

**Technology-based Effluent Limit**--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

**Total Suspended Solids (TSS)**--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

**State Waters**--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

**Stormwater**--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

**Upset**--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

**Water Quality-based Effluent Limit**--A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

## **APPENDIX C--TECHNICAL CALCULATIONS**

Several of the Excel® spreadsheet tools used to evaluate a discharger's ability to meet Washington State water quality standards can be found on the Department's homepage at <http://www.wa.gov/ecology>.

## **APPENDIX D—STUDIES**

1. Analysis of the Available Scientific and Public health Data Regarding the Cosmopolis Mill's Effluent: The Public Health Significance of the Effluent, and its Impact on Water Quality in Grays Harbor, Shellish Growing Waters, and Shellfish, IEH, Inc. 2002
2. Grays Harbor Hydrodynamic & Water Quality Modeling Report, CH2MHill, 2002

## **APPENDIX E--RESPONSE TO COMMENTS**

*Dennis Davies, Weyerhaeuser Company*

### **Comment 1)**

The secondary sludge dioxin analysis would be better measured with the 1613 method rather than 8290.

### **Response 1)**

*The permit has been changed.*

*Frank Meriwether, Department of Health*

**Comment 2)**

Section S3.F, Page 15 of Permit. The last sentence should be amended to read "..., and the Department of Health's Shellfish Program at (360)753-5992 during normal working hours and at (360)786-4183 outside of normal working hours."

**Response 2)**

*The wording has been changed.*

**Comment 3)**

Page 18 of the Fact Sheet, third paragraph under "The studies": Use the word "predicted" rather than "showed" in both the last and the next-to-last sentences.

**Response 3)**

*Comment noted.*

**Comment 4)**

After the last sentence, add "However, preliminary results from a drogue and dye study performed by DOH and Weyerhaeuser's consultant in January 2003 showed that wastewater could reach the sanitary boundary within one major ebb tide."

**Response 4)**

*Comment noted. We haven't received a final copy of the drogue or dye study. We recognize that the preliminary results of the drogue study indicated that the plume may reach the AB boundary in one tidal cycle.*

**Comment 5)**

In the fourth paragraph, I'm not sure what "These documents" refer to. I couldn't find documents related to the ACOE water quality model on the web site (or on the fecal coliform die-off study); however I didn't spend much time searching for them on the site. Perhaps more clarification is needed for the reader to find the documents on this site.

**Response 5)**

*Comment noted. The studies listed in Appendix of the factsheet were posted on the WEB during the extended comment period.*



**Comment 6)**

Page 21 of the Fact Sheet, the paragraph above "Permit limits": The fourth sentence could read: The DOH is responsible for making the decision on the limit..."

**Response 6)**

*Comment noted. We recognize that the DOH has the authority to determine the fecal coliform value that will be used to close the oyster's beds for commercial harvest.*

**Comment 7)**

The last sentence should read: "The permit requires the permittee to immediately notify the DOH if they exceed the fecal coliform trigger limit established by DOH to close oyster beds in the Central Bay of Grays Harbor."

**Response 7)**

*Comment noted. The permit requires the permittee to notify DOH if the fecal coliform count in the final effluent exceeds the trigger set by DOH to close the oyster bed to commercial harvest. See S3-F of the permit. The present DOH trigger is 85,000 colonies/100 milliliters.*

*Brady Engvall, GH/ Willapa Oyster Growers Association*

**Comment 8)**

The shellfish industry is highly regulated based on fecal coliform- the very parameter that this permit is attempting to elevate over 4 times the current permit limit to trigger shellfish closures. Our regulators- Food and Drug Administration (FDA) and Washington State Department of Health (Health) do not allow variance from strict fecal standards established by the Interstate Shellfish Sanitation Committee (ISSC) in shellfish growing areas. The standard is broad based and only allows 14 fecal coliform colonies per 100 mL in growing areas.

**Response 8)**

*The studies done by Weyerhaeuser indicated that the fecal coliform bacteria limit for outfall 001 met the water quality criteria at the oyster beds location with the stream load. The permittee had a study performed that showed 50 percent of the bacteria in their final effluent died upon contact with the receiving waters. Both Ecology and DOH used the die-off study performed by the permittee in their respective analyses. Ecology used the die-off study in determining the limit that would be protective of beneficial uses of Grays Harbor. The 128,000 count/100 mL will not cause water quality criteria violations with Grays Harbor. The DOH increased the trigger to 85,000 count/100 mL with new information supplied by the permittee.*

*The trigger of 85,000 counts/100 mL used by the DOH is based on more conservative values than the Ecology permit limit of 128,000 count/100 mL. The main difference is DOH did not use the hydrodynamic modeling done by the permittee and based their trigger on a not to exceed 14 count/100 mL. The previous trigger for closure did not contain an allowance for die-off of the bacteria when discharged to the receiving waters. The DOH 85,000 count/100 ml trigger is very conservative and protects the oyster beds under the worst case occurrence of fecal coliform contamination. The die-off study was placed on WEB during the extended public comment period.*

**Comment 9)**

The growers are dependent on clean water and use the Federal Clean Water Act (CWA) as the basis for protecting our industry. We review all current and potential impacts to our growing waters based on this Act. Currently the Grays Harbor estuary and Chehalis River Basin are on the Federal Environmental Protection Agencies (EPA) 303d list as compromised. The parameter is fecal coliform. Under EPA's direction DOE has established a fecal Total Maximum Daily Load Study (TMDL). Waste Load Allocations (WLA) have been established and a clean up plan has been submitted to EPA. Weyerhaeuser's waste load of 4% has been exempted from the TMDL.

**Response 9)**

*Ecology did not exempt Weyerhaeuser from the TMDL. The fecal coliform permit limits and the waste load allocation (WLA) were determined simultaneously for the Weyerhaeuser Company's mill at Cosmopolis within the TMDL. The WLA and the NPDES permit limit were determined with new information supplied by the permittee. The proposed limit is protective of beneficial uses for both the Class B marine and Class A marine waters.*

**Comment 10)**

How will the current proposed exemption from the TMDL for the pulp mill be reallocated among current identified contributors who must meet their own WLA?

**Response 10)**

*No reallocation among the other contributors is necessary. See Response 9.*

**Comment 11)**

Were the studies done by Weyerhaeuser to justify the draft permit development ever peer reviewed?

**Response 11)**

*No. Both the Department of Ecology and the Department of Health reviewed the bacteria die-off study and commented on the hydrodynamic and water quality studies results. Ecology and Health had input into the die-off study during the scoping of the study. The model used in the hydrodynamic study was originally developed by the Army Corps of Engineers (ACOE) model and has a history for use as a predictor of dilution in complicated waterbodies. The ACOE model has been used in the North Channel of Grays Harbor.*

**Comment 12)**

Recently the growers commented on DOE's request to change surface water quality standards from fecal to e-coli and interococci standards. How does this play into this draft permit?

**Response 12)**

*The new rule does not affect the species in the proposed permit since limitations of wastewater discharges near oyster beds are still regulated by fecal coliform.*

**Comment 13)**

DOE is working on changing to use based water quality standards. Does this mean that with this permit the upper GH estuary would now be declared industrially compromised and weaker water quality standards would apply to all permit applications?

**Response 13)**

*Rule making on use based water quality standards has not yet been completed. While we can not predict the outcome of this endeavor, rule making is a public process and we expect the oyster growers as a major user will express their concerns.*

**Comment 14)**

If this permit is awarded will other NPDES permits now be allowed to request and be permitted with weaker water quality parameters using Weyerhaeuser's logic of not contributing to the waste load all that much.....?

**Response 14)**

*Yes, it might be possible, but it would be unlikely. Other permit holders could perform the studies that Weyerhaeuser did and demonstrate that an increased limit is appropriate. Weyerhaeuser's pulp mill at Cosmopolis generates a large amount of low grade waste heat. The situation is unique since the final effluent temperature ranges from 30 °C to 38 °C. The temperature of the final effluent is in the Mesophilic range. Mesophilic bacteria encompass most bacteria associated with warm-blooded mammals. The Weyerhaeuser Company's fecal*

*coliforms are unique in terms that they have been cultured in their wastewater treatment system in the Mesophilic environment with respect to temperature. When they are discharged to the cold salty water of Grays Harbor, approximately 50 % of the bacteria die in the first few seconds. Other industrial facilities do not operate in the Mesophilic range. Therefore, dischargers other than Weyerhaeuser would not have the receiving water shock from temperature as Weyerhaeuser fecal coliform do. However, the salt water shock might be the same.*

*Municipal wastewater treatment discharges are required to meet technology fecal coliform regulatory limits based on break-point chlorination. Weyerhaeuser wastewater treatment system does not have a technology based limits. Also, the disinfection with chlorine produces chlorinated organic halides (AOX) compounds. Ecology has made a reasonable balance between extending the mixing zone for fecal coliform with an increased limit and the need to minimize chlorination that produces AOX compounds. Municipal wastewater consists of waste of human origin. Weyerhaeuser process wastewater, discharged via outfall 001, does not contain any waste of human origin. They have a separate sanitary wastewater line that ultimately discharges into the Aberdeen wastewater treatment system. If Weyerhaeuser's wastewater had been wastewater of human origin, we would not have considered granting an extended mixing zone.*

*See Response 9.*

*The water quality criteria are met at the boundary of the extended mixing zone as required by Chapter 173-201A WAC. And again, the discharge meets the criteria at the A/B boundary.*

#### **Comment 15)**

What would prevent non-point fecal contributors, under the current TMDL, from applying for a fecal point source permit then using Weyerhaeuser's logic- that they are not contributing all that much to the waste load- therefore an exemption is in order?

#### **Response 15)**

*There are no exemptions for Weyerhaeuser. See responses 9 & 14. The logic used for determining the NPDES permit limit and WLA for Weyerhaeuser were based on new scientific information provided by the company.*

#### **Comment 16)**

The growers would like to know who will be financially responsible for any shellfish closures that result from this new permit.

**Response 16)**

*As long as Weyerhaeuser meets the conditions of their permit, the company will not be responsible for impacts to the water quality outside of the allowed mixing zone. A large percent of the time, the fecal coliform count from the bioponds are below 1000 counts/100 mL. We expect the final effluent to follow this trend. It is our understanding that the permittee will use a trigger value that is a fractional order of magnitude lower than the permit limit as they do now. When the trigger is exceeded, the permittee will disinfect the effluent with low pH and/or hypochlorite.*

*We have crafted a permit that meets water quality standards and therefore should not result in increased closures. If we see an increase in closures, we are committed to reopening and modifying the permit limit for fecal coliform. We don't expect this will be the case.*

*Randal M Cox, Weyerhaeuser Cosmopolis Pulp Mill*

**Comment 17)**

Special Condition S1.A.1.a., Discharge Limitation for 2,3,7,8-TCDD and footnote f., and S2.A. Monitoring Requirements – The monitoring requirement for 2,3,7,8-TCDD at outfall 001 should be eliminated. Elimination of this monitoring requirement does not compromise Ecology's intentions for the compliance assessment of 2,3,7,8-TCDD, and avoids the potential for the appearance of a permit violation based on a calculation. A practical approach to avoid the possibility of "false positive" values is suggested.

**Response 17)**

*We disagree that the monitoring requirements should be taken out of the permit. There are no permit limits at the final effluent at this time for either dioxins or furans. If there are no effluent limits at this location, then no enforcement action could be taken. The monitoring requirement is kept in the permit; however, the frequency has been reduced from quarterly to yearly. The permit states that compliance of nondetect at 10 ppq at the bleach plant for dioxin meets the WLA for dioxin at the final effluent point.*

**Comment 18)**

Special Condition S1.A.1., Discharge Limitation for AOX from outfall 001 – Weyerhaeuser would prefer that an appropriate AOX limit be established at outfall 001 and the proposed limitation on bleach plant filtrate be eliminated.

**Response 18)**

*After re-evaluating the AOX data and in attempt to be consistent with other pulp and paper mills, we have changed the sampling and compliance point to the final effluent. We have eliminated the AOX limits at the bleach plant and placed the limits for AOX at the final effluent. The limits were calculated for the 95<sup>th</sup> and 99<sup>th</sup> percentile with AOX final effluent data from 2001 and 2002 discharge monitoring reports. The allowances for AOX are 2.0 kg AOX/ADUMT for the monthly average and 2.5 kg AOX/ADUMT for the daily maximum. The testing frequency remains the same. The change is not considered to be backsliding since new information was provided that indicated that the AOX testing at the bleach plant would not be valid due to the inability to pass the QA/QC requirements of EPA Method 1650. The limitations for AOX has been defined as mass limits. That is, production (off-the-machine short tons)\*(MT off-the machine/1.1 Short tons off-the-machine)\* (1.1 ADUMT/MT off-the-machine)\*(allowance for AOX kg AOX/ADUMT)\*(2.2lbs. AOX/ kg AOX). The daily production is 495 short tons/day. With the above allowances of 2.0 and 2.5 kg AOX/ADUMT and the production, the mass limit for the monthly average is 2180 lbs./day and the monthly maximum is 2720 lbs./day.*

**Comment 19)**

Special Condition S1.A.1., Bleach Plant Effluent Limitation for AOX – The permit Fact Sheet indicates Ecology’s intention to establish effluent limits on bleach plant effluent. Limited data indicate the bleach plant AOX is highly variable. Additional information would be required to rationally establish an effluent limitation to match process technology capabilities and mill production plans.

**Response 19)**

*See Response 18.*

**Comment 20)**

Special Condition S1.A.1. – Measurement of AOX; footnote “e” - Weyerhaeuser believes that it will be virtually impossible to produce reportable values for AOX for compliance monitoring using Method 1650 on samples collected from the bleach plant effluent. Quality control required by the method precludes generating reportable data when difficulties with the sample matrix are encountered.

**Response 20)**

*See Response 18.*

**Comment 21)**

Special Condition S1.A.3. footnotes “e” and “b” – The averaging period for wastewater flow and brownstock production should be specified in the calculation of AOX mass.

**Response 21)**

*We agree. The permit has been revised to reflect the averaging periods of seven days for the flow. Since the permit limitations for AOX have been changed to mass, the averaging of the unbleached brownstock production is not necessary. We are allowing the change because there is a lag in AOX discharge compared to the production. Some days there would be AOX discharge but little or no production. Part of the lag is due to the residence time in the wastewater treatment system.*

**Comment 22)**

Special Condition S1, “Fecal coliform” effluent limitation for outfall 001 and footnote “g” on page 9 – The bacteria discharged from the Cosmopolis mill treatment system are not “fecal coliform” as that term is defined in WAC 173-201A.

**Response 22)**

*The bacteria in the Weyerhaeuser Cosmopolis effluent react to the test for fecal coliform as if they were fecal coliform. Once they are discharged into the receiving water one cannot tell the difference between them and other types of fecal coliform with a simple test. Until another indicator organism other than the fecal coliform group of bacteria is established for dischargers that have potentials to impact commercial oyster beds, we must treat the bacteria in this discharge as if they were fecal coliform bacteria. The test procedure developed in Dr. Samadpour’s study is functionally an alternative indicator test. It is not proof, but only a more specific indicator. Until his methodology is incorporated into regulations, we are unable to take full advantage of the test’s results from his procedures. Therefore, we are unable to accept your proposition that the fecal coliform should not be regulated.*

**Comment 23)**

Special Condition S1, “Fecal coliform” effluent limitation for outfall 001 and footnote “g” on page 9 – Washington’s water quality standard clearly intends to regulate the discharge of human pathogens. Decisions from Washington’s Pollution Control Hearings Board substantiate the fundamental regulatory interest in controlling harmful human pathogens.

**Response 23)**

See Response 22.

**Comment 24)**

Special Condition S1, “Fecal coliform” effluent limitation for outfall 001 and footnote “g” on page 9 – The Department of Ecology’s proposed effluent limit is not based on any evidence of the presence of human pathogens. The best information available clearly indicates that no human pathogens are present in the Cosmopolis mill wastewater treatment system.

**Response 24)**

*Ecology must regulate in terms of the potential to cause harm to the environment or the health of the people. The pathogen study went a long way in showing that the probability is low that there are no pathogens in the treated wastewater that is discharged. Ecology regulations are based on the fecal coliform definition in WAC 173-201A-020. The bacteria in your wastewater effluent give a positive result for fecal coliform as defined by WAC 173-201A-020 testing criteria. See Response 22.*

*We used the die-off study in obtaining dilution ratio from the performance value of the bioponds. We considered regrowth of the bacteria and dilution of the biopond’s water with the other introduced water and calculated the dilution factor needed to meet the marine class B water quality criteria including die-off. We obtained the dimensions of the extended mixing zone in the Class B marine water from matching the DKHW model with calculated dilution ratio above. We used the hydrodynamic study to check to make sure that the results obtained in the Class B marine water did not violate the water quality standards of the Class A marine waters. Therefore, we are of the opinion that we have used the science that was available including all studies performed by the company and have proposed a NPDES permit’s limitation for fecal coliform that balances the need to limit the fecal coliform value and the need to reduce the production of AOX compounds generated from disinfection with chlorine. We used the pathogen study as an indicator that pathogenic bacteria were unlikely to be present in the extended mixing zone after discharge of the final effluent. We used the low probability of pathogenic bacteria being in the extended mixing zone as part of the justification for granting it.*

**Comment 25)**

Special Condition S1, “Fecal coliform” effluent limitation for outfall 001 and footnote “g” on page 9; and paragraph B. Mixing Zone Descriptions and Ratios for Outfall 001 on page 9 – Some aspects of Ecology’s derivation of the proposed fecal coliform limitations and an extended mixing zone are scientifically incorrect, arbitrary, and inconsistent with accepted regulatory policy.

The permit Fact Sheet explains that only the biopond bacteria concentration data from “normal conditions” will be used in establishing a “fair performance-based unchlorinated final effluent coliform limit.” Ecology arbitrarily considers the system data for the 30 days after mill startups (following extended mill production shutdowns) to be abnormal. Ecology excised all data for the 30-day period after each mill startup from the database used to derive the “fair” limitations. In



fact, Ecology is well aware that mill shutdowns and startups are normal events which are scheduled to accommodate necessary maintenance activities and to respond to other factors (e.g., product market conditions, labor strikes). The proposed permit requires the fecal coliform limitation to be met on all days of mill operation.

If this is indeed the process Ecology intends to follow, an effluent limit development approach that considers all treatment system performance data (during both normal and so-called “abnormal” performance) must be used to establish appropriate limitations. Weyerhaeuser has calculated appropriate effluent limitations using Ecology’s algorithm and all the biopond bacteria concentration data from 1996-2002. These values, presented to Ecology on several occasions, are 70,000 cfu/100 ml (monthly geometric mean) with no more than 10% of the samples used in calculating the monthly geometric mean allowed to exceed 423,000 cfu/100ml.

### **Response 25)**

*“Fair” was used to mean that normally one would use the effluent data in determining the performance based limits. However, with no data available to obtain a performance based limit with unchlorinated final effluent, we found that we could get an estimate of the performance of the final effluent by using the biopond data if we included regrowth and dilution. “Fair” did not refer to a particular value of the limit to be obtained from the methodology used.*

*The fecal coliform data from the bioponds for thirty days after each start up, was eliminated from the data used to set the fecal coliform limit since it is known that during these periods, high fecal coliform values are expected and usually occur. Proper operation of the wastewater treatment system, mainly the disinfection system would be to disinfect the effluent during this phase as the facility normally does. To use these high values would give a positive bias to the fecal coliform limitation. If these episodes of high fecal coliform went on for a long period the limit would be exceeded even if the limit was higher than Ecology permit limit since the 10 percent exception allows only three days of exceeding the upper value of the permit limit in a month where thirty samples are taken.*

*The extended mixing zone is allowed by WAC 173-201A-100 (12). The rule is silent on the method used in granting an extended mixing zone. However, WAC 173-201A-100 (6) states that the mixing zone shall be minimized. We are of the opinion that the minimization of the mixing zone equates to performance based limit. We followed normal procedures in obtaining the performance limit using non-chlorinated bioponds’ effluent. As explained in the factsheet, we did eliminate the periods of high values during startup of the wastewater treatment system after long shutdowns. If we had not eliminated the periods after shut downs, the water quality of the receiving water would have been compromised. We used all studies that the permittee provided in the determination of the fecal coliform limit. See pages 19-27 of the factsheet and Response 26. Therefore, we consider the method used to determine the fecal coliform limit to be scientifically correct and consistent with regulatory policy.*

*The definition of fecal coliform with respect to the test performed to detect them are bacteria that produce acid or gas from lactose in a suitable culture medium at 44.5 degrees Celsius. After they are discharged into a waterbody, there are no simple tests to differentiate among fecal coliform from warm blooded mammals and the bacteria in the Weyerhaeuser discharge. Likewise, it is very difficult to find the bacteria in the receiving water since a very small sample is used to perform the test. The oysters are exposed continuously to the receiving waters. In order to protect the waters of the state and enforce the current laws of Washington, we have to use the literal definition of fecal coliform.*

*If we used the data during startup periods after long shutdowns, we would introduce period that the permit would be violating water quality standards for the receiving waters for fecal coliform. Therefore, we are unable to accept your proposed fecal coliform limitation.*

*The fecal coliform permit limit was placed in the proposed permit to satisfy the TMDL of the receiving waters.*

*See responses 22 & 24*

#### **Comment 26)**

Special Condition S1, "Fecal coliform" effluent limitation for outfall 001 and footnote "g" on page 9; and paragraph B. Mixing Zone Descriptions and Ratios for Outfall 001 on page 9 – Ecology's proposed extended dilution zone dimensions are arbitrary. Weyerhaeuser's proposed effluent limitation and expanded mixing zone dimension could be proposed without any adverse regulatory or human health impacts. Ecology has ample discretion to accept Weyerhaeuser's proposal.

#### **Response 26)**

*Ecology method is not arbitrary since we use real data, accepted methodologies, the company's studies, and regulations in obtaining our limit. WAC 201A-100(12), does not define how an extended mixing zone shall be developed. We had to derive a methodology to determine the size of the extended mixing zone. The reasoning in support of the extending mixing zone is given on page 19 of the Fact Sheet. The regulations indicate that the extended mixing zone shall be minimized. We interpret the minimization statement to mean that the limits should be based on performance. The percentiles used in performance based limits for NPDES permits are 99% for the daily maximum and 95% for the monthly geometric mean as specified in the Water Quality Program's permit writers manual.*

*In order to obtain the size of the mixing zones in the permit, one has to make professional judgment decisions on what values of the parameters are appropriate for use in the determination of the limit for fecal coliform before calculating the size of the mixing zone. After we obtain the limits for the discharge that would ensure that the permittee was in compliance the majority of the time, the size of the extended mixing zone is obtained by matching the dilution factor obtained above with ratio obtained from a model. The dilution model used was DKHW contained in the*

*PLUMES modeling platform. The methodology used in the proposed permit provides a balance between the reduction in the amount of AOX produced from disinfection with chlorine and the impact of fecal coliform on the receiving waters.*

**Comment 27)**

Special Condition S1, “Fecal coliform” effluent limitation for outfall 001 and footnote “g” on page 9; and paragraph B. Mixing Zone Descriptions and Ratios for Outfall 001 on page 9 – The agency’s proposed effluent limit forces continued reliance on wastewater disinfection with the consequence of inadvertent formation of AOX. The agency’s permitting action will require significant expenditure. This expenditure has a material adverse impact on the mill economic viability.

**Response 27)**

*We recognize that the wastewater effluent will have to be disinfected with hypochlorite or by lowering the pH some of the time. In communications with the mill’s personnel, we have eliminated 90 percent of the cost of disinfection. We have balanced the need to reduce the production of AOX and the need to control fecal coliform. With the discharge being up stream from commercial oyster bed, we are unable to totally eliminate the fecal coliform limit and, consequently disinfection. We are of the opinion that problems will not occur considering the way that the wastewater treatment system will be operated as relayed to us by your representative. After the trigger is exceeded, there will be AOX generated for a short time. We expect the amount of AOX produced by the disinfection to be significantly reduced in the proposed permit.*

**Comment 28)**

Ecology should accept and incorporate the following Weyerhaeuser proposal for fecal coliform permit limitations into Special Condition S1. Discharge Limitations and Special Condition S2 Monitoring Requirements.

- 85,000 cfu/100ml monthly geometric mean
- No more than 10 percent of the samples used in calculating the monthly geometric mean can exceed 250,000 cfu/100ml
- The expanded mixing zone dimensions extend 3,500 meters upstream and downstream of the outfall diffuser
- Daily monitoring for fecal coliform – Most Probable Number test only
- Monthly assessment of biopond bacteria for presence of bacterial pathogens

**Response 28)**

*We are unable to extend either the mixing zone or the fecal limitation for the reasons given in Responses 22, 24, 25, 26, and 27. The DOH needs laboratory results for fecal coliform within 24 hours. Therefore, both tests will have to be done. The proposed permit has been changed to*

*require both the membrane filter and the MPN tests. The membrane filter method is for oyster bed closure. The MPN test is for permit compliance.*

**Comment 29)**

Special Condition S3.F. Reporting – Shellfish Protection – This permit language effectively stigmatizes what will be compliant mill performance. The Fact Sheet discussion supporting this permit condition hints that Ecology is prepared to take permit actions beyond its regulatory authority.

**Response 29)**

*We disagree. The statements were placed in the factsheet to satisfy other competing entities. The statement stands. This statement only states our authority to issue order or revoke and modify permits. Ecology has the authority to revoke and modify the permit under WAC 173-220-150 (d) (iii) & (iv). If water quality or health quality criteria are exceeded, we are duty bound to prevent these exceedences. And likewise we must protect beneficial uses; namely, we must protect the waters that are used for oyster growing, which is a beneficial use.*

**Comment 30)**

Special Condition S2.B. Monitoring Requirements - Sampling and Analytical Procedures -- One of the chronic test specie and method specified in S9.A. for outfall 001 does not comply with 40 CFR Part 136 as required by law and also by this proposed permit.

**Response 30)**

*Only the Holmesimysis costata acute test method was withdrawn by EPA. The draft permit only contains requirements for testing with the Holmesimysis costata chronic test method which is unaffected by the November 19, 2002 Federal Register announcement. WAC 173-205-050(1)(d) allows effluent characterization or compliance monitoring requirements in permits that use any test contained in an EPA toxicity test manual. The Holmesimysis costata chronic test method is in the EPA West Coast toxicity testing manual. The chronic testing requirement in the permit involving Holmesimysis costata is both legal and desirable since this mysid is native to the West Coast.*

*Because of the frequent lack of availability of Holmesimysis costata, labs usually test with the more readily available mysid, Mysidopsis bahia (Americamysis bahia). Therefore, little is lost if the permit is revised to just include the East Coast mysid, Mysidopsis bahia (Americamysis bahia), for chronic toxicity testing with mysids. The permit will be revised to include only the East Coast mysid.*

**Comment 31)**

Special Condition S8 Acute Toxicity for Outfalls 001 and 002 and Special Condition S9 Chronic Toxicity for Outfalls 001 and 002 – The protocol manuals specified for conducting effluent characterization for outfalls 001 and 002 are out of date.

**Response 31)**

*The proposed permit has been revised to include the current EPA manual references.*

**Comment 32)**

Special Condition S9.A. Chronic Toxicity for Outfalls 001 and 002 - The proposed permit specifies a test method that is obsolete.

**Response 32)**

*The draft permit will be revised to specify only topsmelt (*Atherinops affinis*) instead of allowing inland silverside minnows to be used if topsmelt are unavailable. Experience has shown that the supply of topsmelt is reliable and that inland silverside minnows are not needed any more as backup.*

**Comment 33)**

Special Condition S8.B. Effluent Characterization for Acute Toxicity and Special Condition S9.B Effluent Characterization for Chronic Toxicity-- Characterization studies are performed in an undiluted sample that is unrepresentative of actual stream conditions and thus inconsistent with WAC 173-201A.

**Response 33)**

*Chapter 173-201A WAC is used to determine the acute and chronic dilution factors. The acute dilution factor is used to determine the acute critical effluent concentration (ACEC). The chronic dilution factor is used to determine the chronic critical effluent concentration (CCEC). The characterization study has to be performed in accordance with the Chapter 173-205 WAC. The WAC 173-205-050(2)(a) contains the pertinent instructions for determining reasonable potential and the need for WET limits in this permit. This is the standard approach for permits issued in Washington. Chapter 173-205 WAC follows the instructions RCW 90.48.520 which requires more control of effluent toxicity than necessary to meet water quality standards, if possible. Ecology Publication # 98-03, Whole Effluent Toxicity Program Evaluation, presents evidence that the approach to reasonable potential determination in WAC 173-205-050(2)(a) is generally predictive of noncompliance with resulting limits.*

**Comment 34)**

Special Conditions S8.B and C. and S9.B. and C. The mixing zone requirements are inappropriate for the duration of exposure imposed during WET tests.

**Response 34)**

*The permit is correct in following procedures in chapter 173-205 WAC which have been in place since late 1993. This includes the calculation of the ACEC and CCEC and the use of toxicity tests with commonly accepted durations. WET testing requirements depend on standardized tests and procedures in order to optimize test reliability and affordability. The test organisms are disease free, fed well, kept at ideal temperatures, and do not have to expend energy to fight currents or avoid predators. Matching receiving water conditions would be very difficult and expensive and would produce results that are less reliable than the standard tests.*

**Comment 35)**

Special Condition S9.C. Effluent Limit for Chronic Toxicity for Outfalls 001 and 002 -- WET tests performed to evaluate compliance with an effluent limit are analyzed to determine if there is a statistically significant difference in survival, growth or reproduction. The threshold of significance is unstable and inconsistent, and needs to be redefined.

**Response 35)**

*Identical test organism performances would always yield the exact same statistical result. Differences in mean test organism response are by themselves not meaningful without assessment of the variability across the replicates from which those means were derived. The statistical approach and QA procedures involved in WET test analysis are designed to minimize both false positives and false negatives. See Ecology Publication # WQ-R-95-80, Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria, A State's Perspective on WET Methods in the EPA Proceedings of the Twenty-second Annual Conference on Analysis of Pollutants in the Environment, and Statistics and Management of WET Tests in the Learned Discourses feature of the September 1996 SETAC News (Society of Environmental Toxicity and Chemistry).*

*Facilities are not penalized for a single violation of a WET limit. Violation of the WET limit requires the permittee to retest to determine if the toxicity is a continuing problem. Following these procedures required by the permit is deemed by Ecology as permit compliance.*

*The Weyerhaeuser, Cosmopolis treatment plant was not designed nor is it operated to meet any specific test organism performance. No treatment plant to our knowledge in this state is designed or operated for this purpose and yet WET testing has been successfully used for assessing effluent toxicity for ten years.*

**Comment 36)**

Special Condition S9.C. Monitoring for Compliance with an Effluent Limit for Chronic Toxicity for Outfall 001 and 002 -- Failed WET tests are deemed to be evidence of chronic toxicity and a permit violation. This could be a premature and scientifically-incorrect determination.

**Response 36)**

*WAC 173-205-020 does not direct Ecology to consider every instance of statistical significance as a violation but requires separation of real toxic effects from effects due to variability. The system for controlling false positives and false negatives is rigorous and well established in Washington. National WET test variability data from states without WET test review is not representative of this state because we do review WET tests and improve lab performance. See Ecology Publication # WQ-R-95-80, Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria, A State's Perspective on WET Methods in the EPA Proceedings of the Twenty-second Annual Conference on Analysis of Pollutants in the Environment, and Statistics and Management of WET Tests in the Learned Discourses feature of the September 1996 SETAC News.*

*Labs are instructed to run tests with marine organisms at a standard of 30‰ salinity and to avoid salinity gradients across concentrations. Testing samples from outfall 001 should not presents any special problems.*

*Because alpha is set at 0.05 does not mean that 1/20 of the statistical comparisons will yield a false positive. The 5% false positive rate is theoretical and based on worst-case differences in response that are small enough to be due to chance 5% of the time but not small enough be statistically insignificant. When everything lives in the control and everything dies in the effluent, the actual false positive error rate is very much less than alpha. When everything lives in both the control and the effluent, no hypothesis test will find a significant difference no matter how many times that it is repeated. Somewhere in between these two extremes, the type I error rate approaches alpha as the measured differences in response become smaller and more likely to be due to chance. Decreasing alpha to 0.01, as we do for smaller differences in response, will change the false positive error rate to 1/100 tests. See Ecology Publication # WQ-R-95-80, Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria, A State's Perspective on WET Methods in the EPA Proceedings of the Twenty-second Annual Conference on Analysis of Pollutants in the Environment, and Statistics and Management of WET Tests in the Learned Discourses feature of the September 1996 SETAC News.*

*By considering the concentration-response relationship, we can weed out most of the statistical false positives. It is highly unlikely that your facility would experience a false positive at the CCEC and also at every other concentration above it in the test. Assuming a worst-case comparison-wise false positive rate associated with  $\alpha = 0.05$ , the false positive rate when statistical significance must occur at the CCEC and every one of four*

*concentrations above it is over three million to one. With the commenter's assessment, WET noncompliance would be common in this state instead of being rare. The three or four followup tests add to the protection especially in consideration of WAC 173-205-070(1) and (2) which base compliance on the most recent test result.*

**Comment 37)**

Special Condition S9.A. Effluent Characterization for Chronic Toxicity -- The permit specifies chronic test methods that have not been authorized under 40 CFR Part 136.

**Response 37)**

*WAC 173-205-050(1)(d) allows effluent characterization or compliance monitoring requirements in permits that use any test contained in an EPA toxicity test manual. Both the topsmelt and bivalve tests are included in the EPA West Coast manual. California conducted an interlaboratory evaluation of the topsmelt test. The bivalve test was subjected to an evaluation of both intra- and interlaboratory variability here in Washington State and was approved for regulatory use by the Biomonitoring Science Advisory Board (BSAB). The BSAB members were chosen with input by Tim Hall of NCASI representing the marine discharging pulp mills. The marine discharging pulp mills signed a settlement agreement requiring them to abide by the recommendations of the BSAB.*

**Comment 39)**

Special Condition S9.B. and S9.C. Effluent Limit for Chronic Toxicity for Outfalls 001 and 002 -- The definition of test failure is inadequate to avoid excessive errors in data interpretation.

**Response 38)**

*See the Responses 35 and 36.*

**Comment 39)**

Special Condition S9.C. Monitoring for Compliance with an Effluent Limit -- The permit restricts the use of the 99% confidence level.

All statistical analyses specify a critical threshold to define what constitutes a "statistically-significant" result. That level represents the probability that such a result could have been obtained by pure chance. Thus, 95% confidence level translates to a 5% probability that a seemingly important difference was just a coincidence. The permit limits the use of a 99% confidence level (1% risk of Type-I error) to those occasions where a WET test has already failed using a 95% confidence level AND the level of adverse effect is less than a 20% inhibition.

The primary purpose for adopting a 99% confidence level is to reduce the potential impact of



analytical variability. Raising the confidence level from 95% to 99% reduces the risk of Type-I error in any single test by 80%. Given the large number of WET tests that will be performed over the 5-year permit span, this minor change in statistical confidence has a large effect on the probability of compliance. For example, there is an 87% chance that Weyerhaeuser will observe at least one WET test failure even if the effluent is actually non-toxic if a 95% confidence level is used. That risk declines to only 33% if a 99% confidence level is used. Therefore, demanding a higher confidence level reduces the risk of false non-compliance by about 66% over the life of the permit.

**Response 39)**

*See Ecology Publication # WQ-R-95-80, Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria, A State's Perspective on WET Methods in the EPA Proceedings of the Twenty-second Annual Conference on Analysis of Pollutants in the Environment, and Statistics and Management of WET Tests in the Learned Discourses feature of the September 1996 SETAC News. See last paragraph of response 36.*

**Comment 40)**

Special Conditions S8.F.5. and S9.F.5 Sampling and Reporting Requirements for Outfalls 001 and 002 -- The permit improperly restricts the use of ambient receiving water as control water and diluent for toxicity testing.

**Response 40)**

*It is not valid to use a control in statistical comparisons that has not met testing acceptable standard, (TAC). Ambient receiving water often contains pathogens which affect test organisms. Ambient receiving water also can contain natural or anthropogenic toxins. Introduction of confounding factors into the test system via ambient receiving water is not an accepted practice. Labs are good at adjusting salinity to an even 30‰ across all test concentrations. Matching receiving water conditions would be very difficult and expensive and would produce results that are less reliable than the standard tests and not necessarily to the benefit of the Permittee. See "Why is WET So Controversial?" in the Learned Discourses feature of the September 1997 SETAC News.*

**Comment 41)**

Special Condition S3.A. Reporting Requirements -- The permit requires WET test results to be reported on the Discharge Monitoring Report (DMR). The DMR must be certified as "accurate." Such a certification is not possible for WET test results.

**Response 41)**

*See 3<sup>rd</sup> paragraph of Response 36.*

*We agree in general with the EPA policy statement that accuracy in WET testing means adherence to established testing protocols. WET is not unique in this respect. We see no need to modify the DMR certification statement.*

**Comment 42)**

Special Conditions S8.F.4. and S9.F.4 Sampling and Reporting Requirements for Outfalls 001 and 002 – Other aspects of Ecology’s *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*, Publication WQ-R-95-80, are problematic and must be corrected before they are implemented in this permit.

**Response 42)**

*The EPA calculation of biomass (weight divided by start count) is in every test method to assess growth that is listed in 40 CFR Part 136 and in the EPA West Coast manual. The Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria, Ecology Publication WQ-R-95-80, acknowledges the disadvantages of this calculation under some circumstances and states that we will switch back to the old growth (weight divided by final count) calculation when needed. Otherwise, we must follow the approved test methods.*

*We surveyed other states in order to address issues concerning Ceriodaphnia broods. One conclusion was that, since Ceriodaphnia do not produce broods on a 24-hr schedule, labs cannot be reasonably certain of brood occurrence when counts are only done daily considering this difficulty and the lack of a demonstrable problem in Washington with the Ceriodaphnia reproductive endpoint. The only instances of repeat noncompliance with this test found toxicants during the TIEs and the toxicity was eliminated.*

**Comment 43)**

Weyerhaeuser proposal for assessment of acute and chronic whole effluent toxicity – Special Condition sections S8 and S9 should be withdrawn from this proposed permit. In their place Ecology should incorporate a special study requirement which can accommodate site-specific factors relevant to the assessment of whole effluent toxicity. Evaluation of the Cosmopolis outfall 001 as a “saltwater” or marine discharge will not be acceptable to Weyerhaeuser.

**Response 43)**

*We are of the opinion our current process is suitable for identifying and resolving effluent toxicity in the Cosmopolis effluent.*

**Comment 44)**

Special Condition S12. Best Management Practices – The requirement to prepare and implement a BMP plan should be extended from two years to three years from the effective date of this permit.

**Response 44)**

*The extension to three years is granted. The permit has been modified to reflect the change.*

**Comment 45)**

Special Condition S2. Monitoring Requirements, footnote 1 – A wording change for this footnote is suggested to more clearly reflect what we believe the intent of this section is.

Recommendation – Change the footnote to read “Monitoring of the required parameters may be suspended or reduced during mill outages provided the modified monitoring schedule is approved in advance by the Department.”

**Response 45)**

*The suggested change has been made.*

**Comment 46)**

Special Condition S11. Total Chlorine Free (TCF) Study – This study requirement should include an initial “product market acceptance” threshold step prior to requiring a technology review.

**Response 46)**

*The condition stands. Since market acceptance changes over time and can be influenced by marketing strategies employed by the company, it is inappropriate to include this as a threshold. It may be considered in the cost benefit analysis.*

**Comment 47)**

Special Condition S13. Priority Pollutant Scan and Appendix A – The permit Fact Sheet does not explain the basis for requiring annual “priority pollutant scans” or the special emphasis on Persistent, Bioaccumulative Toxic chemicals of concern. The monitoring frequency for a priority pollutant scan should be reduced. The appropriate analytical methods and analyte reporting levels for metals and cyanide need to be clarified.

Weyerhaeuser also requests clarification of the detection limits provided for the metals and cyanide in Appendix A. The heading “Detection or Quantitation Level” is ambiguous – metals and cyanide have what appears to be minimum *detection* limits (DL) required in *ug/L*, while all of the other chemicals listed appear to have *quantitation* limits (QL) in *ug/L*. There are presently many definitions for detection and quantitation limits and there is a substantial difference between the two general terms, with quantitation limits typically four to ten times the quantity of the detection limits, depending on the definition used for each type of limit. Method detection limits (MDLs) are

defined in 40 CFR 136, Appendix B as a quantity determined by multiplying the standard deviation of the analysis of seven samples at the estimated method detection limit by the value of Student's t-distribution. Practical quantitation limits (PQLs) are defined by EPA SW-846 as ten times the method detection limit. Assuming that Ecology intends for the metals to have MDLs listed, the limits given for cadmium and silver are unrealistic for wastewater matrices. Weyerhaeuser proposes detection limits of 1 µg/L for cadmium and silver. The limit listed for zinc is not only unrealistic, it is probably impossible given the ubiquitous nature of zinc in the environment – it would be difficult to be able to meet this requirement for deionized distilled water. Pulp mill effluents typically have zinc concentrations in the 20-100 µg/L range, which are easily quantified using inductively coupled plasma spectrometry (ICP) by EPA 200.7. Weyerhaeuser also proposes use of EPA Method 200.8 - inductively coupled mass spectrometry (ICP-MS), as an alternate method to the graphite furnace methods listed to analyze most of the metals. Weyerhaeuser's laboratory is certified by Ecology to use EPA 200.8, and would prefer to use this method as a more cost-effective way of meeting the detection limits required.

**Response 47)**

*Ecology conducted a reasonable potential analysis for the chemicals listed in the permit application. One sampling event is a not sufficient basis for the reasonable potential analysis, therefore, we are requiring one each year.*

*The priority pollutant scan table lists the detection limits for the metals cadmium, silver, and zinc. These chemicals can be detected at the value given. Our laboratory relayed that the detection level in the permit for these metals can be met. Therefore, the methods and detection levels remain unchanged.*

*The priority pollutant scan table in the permit specifies which list either the detection level (DL) or the quantitation level (QL) over each group of chemicals. The permit remains unchanged.*

*The words identifying PBT have been changed and only the official list of chemicals has been asterisk.*

*Ken Johnson, Weyerhaeuser*

**Comment 48)**

The Department of Ecology commits on page 28 of "Grays Harbor/Chehalis Watershed Fecal Coliform Bacteria Total Maximum Daily Load - Submittal Report," December 2002, to always align Waste Load Allocations with NPDES permit limits. The statement is offered that:

"Future changes to WLA's would only occur as an outcome of the formal NPDES permit review and revision process, such that permit limits will always serve as WLAs for this TMDL.

Although not directly addressed, the implication in Ecology's commitment is that revised NPDES effluent limits for fecal coliform in Grays Harbor will automatically adjust the recognized WLA for the permittee; i.e., no regulatory process through 40 CFR 130.7 need be satisfied to formally re-establish the WLA. With that understanding Weyerhaeuser supports the approach presented in the Grays Harbor submittal report.

The Department of Ecology has proposed revisions to the fecal coliform effluent limits applying to Weyerhaeuser's Cosmopolis pulp mill outfalls 001 and 002 in NPDES permit WA-000080-9. Extensive comments relating to the regulation of fecal coliform discharges from outfall 001 have been submitted by Weyerhaeuser. A copy of this comment letter is attached. Your attention is directed to Comments 6-13.

**Response 48)**

*The Department of Ecology amended page 28 of the TMDL submittal report to remove the reference about the relationship between a future NPDES permit limit and the Waste Load Allocation (WLA). This amendment was requested in an April 8<sup>th</sup>, 2003 letter from Megan White (Ecology) to EPA's Randall Smith, after discussing the language change with the Weyerhaeuser pulp mill environmental manager. The amendment did not substantively change our intent, which is to make sure that the future permit limits and TMDL WLA's align. Because the proposed changes to the permit and WLA limit for fecal coliform bacteria are being pursued through a single public process, this provides certainty that the eventual permit and WLA will be consistent. A copy of the April 8th correspondence is given below.*



STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

P.O. Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

April 8, 2003

Mr. Randall Smith, Director  
U.S. E.P.A., Office of Water  
1200 Sixth Avenue OW-135  
Seattle, WA 98101

RE: Letter of Addendum for Grays Harbor/Chehalis Watershed Fecal Coliform Bacteria  
TMDL, December, 2002

Dear Mr. Smith:

By this letter Ecology is revising the *Grays Harbor/Chehalis Watershed Fecal Coliform Bacteria TMDL Submittal Report, December 2002*. We are removing from the submittal report the reference to the relationship between a future NPDES permit limit and the Waste Load Allocation (WLA) for the Weyerhaeuser Cosmopolis Outfall 1.

This change only affects page 28 of the submittal report. Other references in the report stating the validity of the present permit limits (5,000 cfu monthly average and a daily maximum of 20,000 cfu) as a WLA should not be changed. This addendum is consistent with direction received earlier from U.S. E.P.A. Region 10 so that approval of the TMDL will follow promptly.

The middle paragraph on page 28 of the Submittal Report is replaced with the following paragraph:

*Reasonable Assurance that Point-Source Waste Load Allocations will be achieved*

*Wasteload allocations (WLA 's) for point-source dischargers will be implemented by the Department of Ecology through it's NPDES permitting authority. Current permit limits are appropriate for achievement of state water quality standards.*

It should also be noted, however, that a revised NPDES permit with higher bacteria limits for Weyerhaeuser outfall 1 is about to be released for formal public review. The proposed higher bacteria limits are based upon an application of improved science and studies showing that bacteria fate and transport from the facility are much different than previously understood. Ecology has evaluated the proposed higher bacteria limits of the permit and determined that they are consistent with the loading capacity of the TMDL.

In order to make sure that the future approved permit limits will align with a TMDL WLA for the facility, we will be conducting a separate public process to propose a higher WLA simultaneously with the NPDES permit review process. The proposed WLA is consistent with the higher permit limits being proposed. As is true for the revised permit limits, the new WLA is also supported by science showing it is protective of water quality.

It is our understanding from conversations with EPA Region 10 that this approach will accommodate simultaneous approval of a revised WLA and revised NPDES permit. This will provide certainty that the eventual permit limits and WLA will be consistent.

Sincerely,



Megan White, P.E. Manager  
Water Quality Program

cc: Kelly Susewind, Ecology  
Ron McBride, Ecology

*Dean Schwickerath, Wildlife Forever of Grays Harbor*

**Comment 49)**

It should be pointed out that our organization recognizes that situations requiring NPDES permits should never be a tradeoff between protecting the environment and doing good business. Good businesses should protect the environment because our citizens desire this, because people's health is at stake, and because it is the law. The Department of Ecology was formed for this purpose, and this permit goes to the heart of your agencies work. The estuary of the Chehalis River and inner harbor in Aberdeen have become polluted over the many years of industrial abuse as recognized by the EPA, and this permit if approved would only increase this problem rather than work to reduce the water pollution, a requirement of the Clean Water Act.

**Response 49)**

*We disagree that the proposed permit will cause any violation of the water quality standards. The permit was written in consideration of new information regarding the survival of fecal coliform bacteria in the receiving water and transport of the load. See Response 9.*

**Comment 50)**

We believe that Weyerhaeuser is a company with a lot of creative employees, and given the proper incentive, could offer cost effective solutions to handle their waste without harming water quality. The solutions should avoid direct, large quantity discharging into the Chehalis River and inner harbor, such as this permit which requests twice the discharge rate as their current permit allows, a permit that is violated far too frequently.

**Response 50)**

*The company, with the aid of Ecology, has been working on the fecal coliform problems for almost ten (10) years. The company has made many changes including redoing their sanitary line throughout the mill, hunting down and repairing sinks where fecal could collect and could be randomly introduced into the process wastewater treatment system, investigating methods of treatment to reduce fecal coliform, and considering different types of disinfection. See responses 49, 81, & 107. Department of Health (DOH) has increased the trigger that they use to close the oyster beds to harvest to 85,000 count/100 mL. This increase is due to new information about the fate of the fecal coliform discharge by the permittee.*

**Comment 51)**

Department of Ecology has responsibility to ensure the waters of Grays Harbor meets the Clean Water Act requirements, and having so far failed to do this, must take action to work with Weyerhaeuser on a long range plan. This plan must reduce Weyerhaeuser's pollution contribution to a level that over a reasonable number of years will clean up the inner harbor waters to a level that is safe rather than contaminated and classified as an area to be avoided by the shellfish industry. With over 30 discharge outfalls in the inner harbor, Weyerhaeuser is just one of DOE's responsibilities to improve, and this permit is the time to do this.

**Response 51)**

*Ecology has worked with Weyerhaeuser for many years and has made real progress in reducing many pollutants. We also have worked with the company on the fecal coliform problem in the current permit. Progress has been made in reducing the effect of their discharge on the environment with respect to fecal coliform. They have provided new information on the fate of fecal coliform in the receiving waters with the fecal coliform die-off study and the hydrodynamic study. With this new information we feel comfortable increasing the fecal coliform limit in the proposed permit. The WLA was determined within the TMDL through the proposed permit. We do not believe that the proposed permit will cause further degradation of the receiving waters. In fact, the permit is a step toward getting the receiving waters off of the 303d list. See Response 81.*

**Comment 52)**

Our organization wants Weyerhaeuser to stay in our community, even as global economics competing against companies located in other countries with extremely cheap labor costs make it tough for them to stay. At the same time we can't sell our environmental health down the river to try to make up for business costs that are beyond our control, and the Department of Ecology must do its job required by law, including acting as a responsible agent for the Clean Water Act.

**Response 52)**

*Comment noted. See Responses 14, 16, 49, 50 & 51*

**Comment 53)**

What percent of the cumulative total pollution load on the Chehalis River and inner harbor does Weyerhaeuser contribute today?

**Response 53)**

*Table 5 of the Grays Harbor Fecal Coliform TMDL, (Greg Pelletier and Keith Seiders, 2000) shows Weyerhaeuser's load as 3.8 percent of total.*



**Comment 54)**

Same question considering the new permit, what is the percent of the cumulative total pollution load on the Chehalis River and inner harbor that Weyerhaeuser will contribute?

**Response 54)**

*The load will be 4.3 percent based on a yearly load from the bioponds effluent including regrowth and dilution from the bioponds to the final discharged point. The percentage accounts for the die-off of the fecal coliform after it is discharged into the receiving waters. The WLA was calculated with the new information supplied by the company. See Response 81.*

**Comment 55)**

What reduction on inner harbor water pollution is planned by Department of Ecology in 2003?

**Response 55)**

*The TMDL projected that the water quality standard for fecal coliform bacteria will be achieved in the tributaries and harbor by 2005 (five years after completing the public process for the TMDL summary implementation strategy in 2000). Because water quality conditions and cleanup targets vary according to the harbor location (primarily characterized by different tributary locations) it's not practical to answer the question with a numerical value. But we can extrapolate, based on water quality improvements observed in several tributary /harbor locations so far, that by late 2003 there should be an approximate 60% reduction achieved, compared to the levels found during the 1998 TMDL study.*

**Comment 56)**

What date is Ecology targeting to have the inner harbor waters clean to meet the Clean Water Act?

**Response 56)**

*See Response 55, i.e., 2005.*

**Comment 57)**

With the new proposed outfall by Sierra Pacific at Junction City, and this large increase requested by Weyerhaeuser at Cosmopolis, don't these combined discharges into the

Chehalis River violate the Clean Water Acts requirement to improve water quality rather than reduce water quality which the combination will do?

**Response 57)**

*The only permit condition proposed to increase for the Weyerhaeuser pulp mill is the fecal coliform bacteria limit. The Sierra Pacific facility did not request nor were they provided a bacteria limit in their permit. The Sierra Pacific facility discharge does not include any sanitary effluent and they do not conduct any biological treatment with pathogenic concerns that might warrant the need for a bacteria limit.*

*However, the higher bacteria limit for the pulp mill actually accommodates what we expect will be a net environmental improvement over current discharge conditions. This is because the new limit will allow significant reductions of chlorine disinfectant, which will result in a much lower discharge of absorbable organic halides (AOX) to Grays Harbor. AOX is a regulated pollutant in the 1998 federal effluent guidelines.*

**Comment 58)**

Appendix D of the fact sheet for comment on this permit references two studies without any information how to get these documents. Without that information the public doesn't have full access to all material, and Ecology must provide this information and extend the permit deadline to give additional time for this research.

**Response 58)**

*Ecology recognized this problem, posted the documents on the WEB, and extended the public comment period. The comment period was extended to June 30, 2003. The extension allowed the public time to review these documents. They were placed on the WEB during the extended comment period at the Industrial Section WEB site.*

*Greg Wingard, Waste Action Project*

**Comment 59)**

In addition to providing brief comment, the purpose of this message is to request a 15 day extension to the public comment period. This request is made on behalf of our members who live or recreate in the vicinity of the permitted facility.

**Response 59)**

*The comment period was extended to June 30, 2003*

**Comment 60)**

The request for additional time is due to the complex nature of the technical information presented to support the permit renewal. I also understand that there was initial difficulty in accessing technical appendices which were supposed to be accessible via the Ecology web site.

**Response 60)**

*The comment period was extended to June 30, 2003. We apologize for the delay in making these documents available on the WEB. The two studies were placed on the WEB at the Industrial Section homepage during the extended public comment period.*

**Comment 61)**

Not with standing the above, Waste Action Project is concerned about Ecology's proposal to allow much greater discharges of fecal coliform from the Weyerhaeuser Cosmopolis Mill. Ecology in setting mixing zones is supposed to take every effort to minimize the size of the mixing zone. It does not appear that minimizing the size of the mixing zone was even a consideration in this permit renewal.

**Response 61)**

*The mixing zone was extended as allowed by WAC 173-201A-100(12). The extended mixing zone was kept as small as possible. See page 21 of the factsheet.*

**Comment 62)**

In the past high fecal coliform discharges from this facility have coincided with closures of shell fish harvesting in the vicinity, including commercial harvesting. Harvesting of shell fish is a beneficial use of the receiving water. The Washington State Water Quality Standards (WQS) require that Ecology protect such beneficial uses. It appears that the increase in allowed discharges of fecal coliform as authorized by the draft permit will allow the mill to adversely impact shell fish rearing and harvesting while maintaining a facade of legal discharge under the proposed permit. This is in direct opposition to the clear requirements of the WQS to protect beneficial uses and implement anti-degradation.

**Response 62)**

*With the new information submitted by Weyerhaeuser related to the survival of fecal coliform in the receiving water, the DOH raised their closure trigger to 85,000 count/100 ml. Our analysis has determined that the fecal coliform limit in the proposed permit will protect the beneficial uses and will not degrade the receiving waters. See Response 14.*

**Comment 63)**

It also appears that Ecology is attempting to create a more permissive effluent limit for fecal coliform than what was in the previous permit in spite of information that the additional pollutant loading could have a negative impact on shell fish harvesting. This appears to be back sliding which is not allowed under federal law.

**Response 63)**

*The limit was increased because of new information. After careful analysis, we are of the opinion that the permit is not more permissive nor is it backsliding. The new information is related to the fate of the bacteria in the receiving waters. See Response 14.*

*Kristine Koch, Environmental Protection Agency*

**Comment 64)**

The fact sheet states that the capacity of the mill is 500 tons per day of dissolving and paper grade sulfite pulp, however, looking at a period from March 2000 through March 2001, the maximum production was always greater than 500 tons per day with the highest production rate of 614 tons per day occurring on March 9, 2000.

**Response 64)**

*You are correct, the production of 500 tons/day is the sustained production. The mill is capable of producing 614 tons/day but it does not perform at that level over the long term.*

**Comment 65)**

The effluent limitations for AOX are given as a factor based on production rates, as is provided in the effluent guidelines.

**Response 65)**

*Comment noted. There are no effluent guidelines for dissolving sulfite. We developed a performance based limit for AOX in the final permit with compliance at the final effluent. We changed from a limit at the bleach plant to a limit on the final effluent due to solids interference with the quality control of the AOX test.*

**Comment 66)**

EPA's guidance for calculation of production-based effluent limits (see attached) requires the permit writer to determine a single estimate of the expected production over the life of the permit (i.e., the long-term average production) and multiply that number by the production factors in the effluent guidelines to obtain effluent limitations. EPA would like for Ecology

to be consistent with the application of this methodology for determining production rates and production-based effluent limitations.

### Response 66)

*The effluent limitations for conventional pollutants were calculated using the off-of-the machine production for 2000. The production was based on the year 2000 since 2001 was not a typical year because of labor problem. The yearly production was based on 11.5 months since they had two weeks of no production. The portion for cull and trims were considered in the production used to calculate the limitations for conventional pollutants. The entire method was in accordance with the 40 CFR 430.01.*

*The mathcad worksheet that shows the calculation is given as:*

$$\begin{aligned}
 a &:= \begin{pmatrix} 101 \\ 779 \\ 110 \end{pmatrix} \\
 b &:= \begin{pmatrix} 26.4 & 24.95 & 15.5 \\ 50.8 & 48.05 & 29.75 \\ 38.05 & 38.05 & 23.65 \\ 70.85 & 70.65 & 43.95 \end{pmatrix} \quad b \cdot a = \begin{pmatrix} 23807 \\ 45834 \\ 36086 \\ 67027 \end{pmatrix} \quad c := b \cdot a \\
 &\quad \frac{a_{0,0} + a_{1,0} + a_{2,0}}{2} = 495 \\
 &\quad c = \begin{pmatrix} 23807 \\ 45834 \\ 36086 \\ 67027 \end{pmatrix} \\
 d &:= \left[ \text{round}\left[\left(c_{0,0} + 2 \cdot 2 \cdot 495\right), -2\right] \quad \text{round}\left[\left(c_{1,0}\right), -2\right] \quad \text{round}\left[\left(c_{2,0}\right), -2\right] \quad \text{round}\left[\left(c_{3,0}\right), -2\right] \right] \\
 &\quad d = (25800 \quad 45800 \quad 36100 \quad 67000) \\
 &\quad .102 \cdot 495 \cdot 2 = 100.98 \quad \text{cellophane} \\
 &\quad (.787 \cdot 495) \cdot 2 = 779 \quad \text{acetate} \\
 &\quad .111 \cdot 495 \cdot 2 = 110 \quad \text{paper} \\
 b^T &= \begin{pmatrix} 26.4 & 50.8 & 38.05 & 70.85 \\ 24.95 & 48.05 & 38.05 & 70.65 \\ 15.5 & 29.75 & 23.65 & 43.95 \end{pmatrix} \quad \begin{array}{l} \text{acetate} \\ \text{cellophane} \\ \text{paper grade} \end{array} \\
 b &= \begin{pmatrix} 26 & 25 & 16 \\ 51 & 48 & 30 \\ 38 & 38 & 24 \\ 71 & 71 & 44 \end{pmatrix} \quad \begin{array}{l} \text{average lbs bod/ton} \\ \text{maximum lbs bod/ton} \\ \text{average lbs TSS/ton} \\ \text{maximum lbs TSS/ton} \end{array}
 \end{aligned}$$

*The year 2000 average production was the same as the average from 1994 to 2000.*

**Comment 67)**

In the absence of effluent guidelines for this type of mill, Ecology's reliance on sulfite and Kraft paper guidelines is reasonable and defining AKART as ECF with oxygen bleaching/delignification is appropriate to this discharge.

**Response 67)**

*Comment noted.*

**Comment 68)**

The application of the 1991 Columbia River TMDL 2,3,7,8-TCDD (dioxin) WLA at the bleach plant is appropriate to determine compliance with the effluent limits for dioxin. EPA agrees that the internal monitoring points are the only sources of this pollutant and the concentrations of dioxin in the effluent are diluted with other waste streams from the facility such that current analytical techniques cannot measure the effluent concentrations. EPA has determined that the internal limits for dioxin (i.e., 10 ppq) at the flow rate of 24 mgd would result in an effluent loading of 0.00091 mg/day which is well below the WLA of 0.28 mg/day for this facility.

**Response 68)**

*Comment noted. The TMDL was for the Grays Harbor. The WLA allocation of 0.28 mg/day gives a concentration below the quantification level of the dioxin test procedure; therefore, a nondetect of 10 ppq is the value used to determine compliance.*

**Comment 69)**

Ecology's reliance on the Kraft paper subcategory limit of 31.9 ppq is reasonable for this discharge.

**Response 69)**

*Comment noted.*

**Comment 70)**

Ecology's assumption that the maximum variability factor (VF<sub>30</sub>) for BOD<sub>5</sub> can be used for AOX is reasonable in establishing the AOX limit given similar processes and chemicals used.

**Response 70)**

*Comment noted.*

**Comment 71)**

EPA agrees with Ecology's discussion of AKART for Fecal Coliform bacteria such that UV disinfection cannot be successfully used due to the high coloration and suspended particles in the effluent and chlorination increases the overall toxicity of the effluent (e.g., increases AOX in the discharge). However, Ecology did not consider the use of ozone disinfection for this discharge. EPA believes that Ecology must make their AKART determination using all available technologies for treatment. EPA has attached a fact sheet on ozone disinfection to assist Ecology with this determination.

**Response 71)**

*With the high suspended solids and the high demand for ozone, use of ozone as a disinfection chemical is not feasible.*

**Comment 72)**

Ecology appears to have made a reasonable balance between extending the mixing zone for Fecal Coliform and the need to minimize chlorination that produces chlorinated organic chemicals. Taking into consideration the difference between a full pipe and gravity flowing pipe was especially adroit.

**Response 72)**

*Comment noted.*

**Comment 73)**

The fact sheet was not clear on the data set that was evaluated to obtain the 95<sup>th</sup> and the 99<sup>th</sup> percentile nor what those values were. For example, using the data from January 1997 to the present, the 95<sup>th</sup> and 99<sup>th</sup> percentiles for average Fecal Coliform were 588 FC/100 ml and 2,465 FC/100 ml, respectively. The corresponding values for maximum Fecal Coliform were 90,000 FC/100 ml and 160,000 FC/100 ml. Further, it is not clear how this information was used to derive the proposed effluent limitations.

**Response 73)**

*The 95<sup>th</sup> and 99<sup>th</sup> percentiles were calculated using nonchlorinated data from the bioponds' effluent after eliminating the data during a thirty day period after startup of the mill following a shutdown. The thirty days of data were eliminated because otherwise limits would be highly biased with very high numbers during many of these periods. The historical data indicates that one would expect high values after startup of the wastewater treatment system immediately after a mill shutdown. The biopond data were used because it was the*

*only data that we had without the use of chlorine as a disinfectant. The final effluent is disinfected with chlorine containing compounds. We did not use the final effluent fecal data.*

**Comment 74)**

The application of a monthly effluent limit for Fecal Coliform bacteria with an allowable excursion for ten percent of the samples is inconsistent with other permits issued by Ecology for this parameter. Ecology needs to explain why a daily maximum effluent limitation is not necessary (refer to 40 CFR 122.45.d) for this discharge, why it is allowable to exceed this limit ten percent of the time, and how the application of this parameter to the discharge is different than other discharges of Fecal Coliform before proceeding with the proposed effluent limitations.

**Response 74)**

*Fecal coliform water quality criteria are stated as a monthly geometric mean and a maximum value that is not to exceed more than ten percent of the time. The test for fecal coliform is very variable. The large variability is due to the fact that bacteria populations can grow exponentially and that the fecal coliform determinations are made on 0.1 milliliter or less of sample. That is, on one day the test results can be nondetect and the next day the results can be several orders of magnitudes higher. This is particular true at the Weyerhaeuser mill at Cosmopolis. The large variability of the test is the reason that the water quality criteria for waters of the state have a geometric mean with no more than ten percent of the samples used in calculating the geometric mean exceeding an upper value, that is, WAC 173.201A-030(2)(i)(B) for Class A marine waters and (WAC 173.201A-030(3)(i)(B) for Class B marine waters. The daily maximum is required by 40 CFR 122.45.d is not applicable since the tests for fecal coliform are so variable and it would be impracticable to have a daily maximum limit not to be exceeded. Therefore, the exception is allowed.*

*The permit was written in accordance with the exceptions for these two water bodies. The permit limit for fecal coliform will meet the water quality criteria for fecal coliform outside the extended mixing for the Class B marine waters and for the Class A waters at the AB boundary.*

**Comment 75)**

The fact sheet did not clearly state how the effluent limits for Fecal Coliform bacteria (i.e., 42,000 FC/100 ml and 128,000 FC/100 ml) were derived. If these are derived from a model, Ecology should reference the model analysis and provide a brief summary of the model and how it was applied to this discharge.



**Response 75)**

*The analysis is given on pages 17 to 24 of the factsheet. These limits were derived on a performance basis using the unchlorinated biopond effluent. After the limit was obtained, a dilution ratio needed to meet the water quality criteria was determined. The dilution ratio above was matched to the DKWH model in the PLUME modeling platform to determine the size of the extended mixing zone. The limit meets the water quality criteria of the Class B marine water since the water quality criteria was used to determine the dilution ratio. Also, the criteria are met at the A/B boundary.*

**Comment 76)**

The historical data shows that normal coliform readings from this facility are much lower than the occasional extraordinary value that Ecology is permitting as protective of shellfish and human health. It is the practice of the company to divert the effluent to one of four holding ponds for disinfection if a high reading is obtained. It is unclear from the fact sheet how the proposed effluent limits will require the permittee to maintain their current performance levels and how these limits are protective of water quality standards.

**Response 76)**

*The company cannot operate by diverting wastewater to the ponds because the fecal coliform test requires 24 – 48 hour to confirm high levels of fecal coliform in the effluent. The diversion of the flow during high or low pH can be done because the test for pH is instantaneous. See Response 14, 73, & 81. They can operate at higher fecal coliform count and meet the DOH closure criteria and the water quality criteria. This mode of operation is due to the extended mixing zone that was a result of new information provided by the permittee.*

**Comment 77)**

Outfall 002 has effluent limitations for pH, BOD<sub>5</sub>, oil and grease, and fecal coliform, yet the permittee is only required to monitor for Fecal coliform and COD. The permit must require monitoring for the parameters that are limited by the permit.

**Response 77)**

*The tests and monitoring frequencies have been added.*

**Comment 78)**

The split of the table in section S2.A separates the category “Outfalls 001 & 002” and appears to require monitoring for Fecal Coliform only in outfall 001 and monitoring of COD only in outfall 002. EPA recommends that Ecology fix this so that the category title and requirements are clearly displayed on one page.

**Response 78)**

*The title has been fixed.*

**Comment 79)**

In footnote g of section S1.A.3, EPA believes that Ecology meant to say "...monthly geometric mean..."

**Response 79)**

*The footnote has been changed.*

**Comment 80)**

The permit should provide the calculation required to convert the measured effluent concentration (e.g., mg/l) to the effluent loading (e.g., lb/day) to eliminate any potential error in the permittee understanding this requirement and Ecology enforcing this requirement.

**Response 80)**

*These calculations are long standing requirements of NPDES permits. The permittee has sufficient knowledge to calculate the pounds per day from concentration. The formula is Pounds/day = Flow(MGD)\*8.34\*Concentration(milligram/liters). The formula has not been placed in the permit.*

**Comment 81)**

More specific information about the TMDL should be provided in the TMDL Section of the fact sheet and your TMDL revision submission. EPA will need a letter submitting your TMDL revision with the following information. Please state in numbers the previous WLA and the revised WLA, the target of the TMDL and the calculations used to determine the size of the mixing zone that show that the target of the TMDL is met at the edge of the mixing zone. Also, a clear statement that the revised WLA fits within the loading capacity of the approved Grays Harbor TMDL and that none of the other LAs or WLAs will be affected by the change of the Weyerhaeuser WLA.

**Response 81)**

*The previous (i.e., current) WLA is the same as the current NPDES permit limit: A monthly geometric mean of 5,000 colonies/100ml. fecal coliform bacteria, with a maximum daily discharge limit of 20,000 colonies /100ml. The proposed limit is 42,000 colonies*

/100ml. monthly geometric mean, with no more than 10% of samples to exceed 128,000 colonies /100ml. each month. The TMDL target is to limit cumulative bacteria loading from all point and non-point sources so that water quality standards are met in the tributaries and Grays Harbor. The targets are Class A fresh water: 100 colonies /100ml with no more than 10% exceeding 200 colonies /100ml; Class B fresh water: 200 colonies /100ml with no more than 10% to exceed 400 colonies /100ml; Class B Marine: 100 colonies /100ml with no more than 10% to exceed 200 colonies /100ml; Class A marine: 14 colonies /100ml with no more than 10% exceeding 43 colonies /100ml.

The calculations and methods used to determine the length of the mixing zone that will provide attainment of the Class B marine standards at the mixing zone edge, are shown in pages 17 to 24 of this fact sheet. The Class B marine water quality criteria for fecal coliform was directly used in the methodology of finding the size of the extended mixing zone. Therefore, the water quality criteria for fecal coliform will be met at the edge of the extended mixing zone. Additional explanation is provided in the last sentence in 1<sup>st</sup> full paragraph and item 4 in the flow cart on page 22 of this factsheet. The water quality criteria of the Class A marine water will be met at the A/B boundary. The hydrodynamic study of Grays Harbor performed by the permittee consultants was used to determine that the water quality criteria for fecal coliform were met at the A/B boundary.

The proposed WLA revision fits within the loading capacity of the Grays Harbor TMDL for many reasons:

- The higher WLA is supported by science showing it is protective of water quality. The water quality outcomes provided by the existing TMDL would be met at the edge of the mixing zone allowed in the proposed permit. Additionally, Weyerhaeuser's facility has a very small effect on the overall TMDL load to Grays Harbor.
- The original Weyerhaeuser WLA contributes less than 4% of the total TMDL bacteria load. Changing it has little effect on the overall Grays Harbor load calculations and resulting WLA's and non-point pollution source load allocations (LA's), given improved information about bacterial die-off in the Weyerhaeuser's mixing zone.
- About 95% of the total bacteria load to the harbor is still non-point. Cleanup strategies and overall implementation are therefore largely unaffected by a change to the Weyerhaeuser WLA.
- The TMDL found that LA's for non-point sources were mostly limited by needing to meet state fresh water quality standards. The only areas where the LA's were limited by needing to meet marine water quality standards in Grays Harbor were the Humptulips River, Elk River, and Andrews Creek. These three exceptions were localized in regions of Grays Harbor that are a large distance from the Weyerhaeuser's facility and will not be influenced by the changes in the proposed permit because of rapid die-off rates of bacteria from the distant sources.
- The modified WLA would only increase loading to the mixing zone around the facility. Capacity exists in Grays Harbor to absorb the higher loading from this modified WLA and still achieve the TMDL targets.

**Comment 82)**

Page 6, Summary of Compliance with Previous Permit. The fecal coliform excursions should be discussed under this section. The company was out of compliance with the fecal coliform limits of the previous permit a number of times. Ecology should describe the excursions from the permit limits and discuss what is being done to resolve them.

**Response 82)**

*The following penalties were issued for violations in 2002 and in 2001. The fecal count by the MPN method ranged from 20,199 to 160,000 count/100 ml. Some of the fecal coliform penalties were issued with bioassay penalties. See Response 107.*

<i>Penalties</i>			
<i>Date</i>	<i>Parameter</i>	<i>Number</i>	<i>Amount</i>
3/8/01	Spill	1	\$5,000
3/15/01	FC	1	\$6,000
3/14/01	FC	1	\$6,000
3/27/01	pH	7	\$7,000
3/27/01	Bioassay	1	\$2,000
5/31/01	pH	3	\$2,000
6/11/01	pH & bioassay	2	\$3,000
7/12/01	Bioassay	1	\$2,000
10/18/01	FC	4	\$14,000
1/15/02	FC, bioassay, BOD	3	\$7,000

**Comment 83)**

Page 16, Surface Water Quality Criteria, Fecal Coliform. The text states that the criteria are summarized for marine waters. It is important to clarify that the criteria currently shown are for Class B marine waters. The Class A criterion for marine waters should also be shown here since it is very significant to the permit limits.

**Response 83)**

*The receiving water in the vicinity of the outfall is brackish. The water quality criteria for the waters in the vicinity of the outfalls are as follows:*

*Class B Marine waters*

*Fecal Coliforms*

*100 colonies/100 mL maximum geometric mean and not have more than 10 % of the all samples obtained for calculating the geometric mean value exceeding 200 colonies/100 mL*

<i>Dissolved Oxygen</i>	<i>5 mg/L minimum</i>
<i>Temperature</i>	<i>19 degrees Celsius maximum</i>
<i>pH</i>	<i>7.0 to 8.5 standard units</i>
<i>Turbidity</i>	<i>less than 10 NTU above background</i>
<i>Toxics</i>	<i>No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)</i>

*and below for the Class B freshwater:*

<i>Fecal Coliforms</i>	<i>100 colonies/100 mL maximum geometric mean and not have more than 10 % of the all samples obtained for calculating the geometric mean value exceeding 200 colonies/100 mL</i>
<i>Dissolved Oxygen</i>	<i>6.5 mg/L minimum</i>
<i>Temperature</i>	<i>18 degrees Celsius maximum</i>
<i>pH</i>	<i>6.5 to 8.5 standard units</i>
<i>Turbidity</i>	<i>less than 10 NTU above background</i>
<i>Toxics</i>	<i>No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)</i>

*and Class A Marine waters:*

<i>Fecal Coliforms</i>	<i>14 colonies/100 mL maximum geometric mean and not have more than 10 % of the all samples obtained for calculating the geometric mean value exceeding 43 colonies/100 mL</i>
<i>Dissolved Oxygen</i>	<i>6 mg/L minimum</i>
<i>Temperature</i>	<i>16 degrees Celsius maximum</i>
<i>pH</i>	<i>7.0 to 8.5 standard units</i>
<i>Turbidity</i>	<i>less than 5 NTU above background</i>
<i>Toxics</i>	<i>No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)</i>

#### **Comment 84)**

Page 17, 1st line. The fact sheet states that the size of the extended mixing zone is 1300 meters. It would be helpful if Ecology referenced where in the document it is described how this size was derived.

**Response 84)**

*See last paragraph under the heading “The extended mixing zone for fecal coliform **only**” and item 4 in the flow chart on page 24 of the factsheet.*

**Comment 85)**

Page 18, The studies, 3rd paragraph, 4th sentence

The sentence currently reads “The model showed that the higher fecal coliform counts could be discharged without exceeding the water quality criteria at the A/B boundary than are in the proposed in the permit.” A more clear sentence might be “The model showed that the higher fecal coliform limits proposed in this permit could be discharged without exceeding the water quality criteria at the A/B boundary.” Did the model also show that the Class B marine criterion at the edge of the mixing zone would be met with the proposed fecal coliform limits? If so, this should be stated here. This is particularly important since in the next section called “Limiting case” you describe the Class B marine waters as the limiting factor to the value of the fecal coliform in the proposed permit.

**Response 85)**

*Comment noted. See 2<sup>nd</sup> full paragraph page 21 of factsheet. The dilution ratio calculated in Box 3 in the flow diagram, page 24 of the factsheet, is based on meeting the Class B marine water quality criteria at the edge of the extended mixing zone.*

*Rick Wilson , Surfrider Foundation*

**Comment 86)**

Surfrider Foundation has reviewed the draft permit and fact sheet for the above- referenced NPDES permit for Weyerhaeuser, Cosmopolis Mill. Our primary concern with this draft permit revision is the proposed over 8-fold increase (from 5,000 cfu/100 ml to 42,000 cfu/100 ml) in the allowable fecal coliform (FC) concentrations from Weyerhaeuser's Outfall No. 001. Of equal concern is the elimination of a maximum daily discharge limit (currently 20,000 cfu/100 ml). The FC discharge limit for Outfall No. 002 is proposed to be increased from 5,000 cfu/100 ml to 6,000 cfu/100 ml, again with no limit on the daily maximum concentration.

**Response 86)**

*The permittee provided new information on the fate of fecal coliform in the receiving waters. The permit was written in accordance with WAC 173-201A-030(2)(i)(B) for Class A marine waters and WAC 173-201A-030(3)(i)(B) for Class B marine waters and new information. The fecal coliform limit for outfall 002 was recalculated based on the dilution modeling and*

*the die-off study performed by the company. The previous permit limits did not allow for any die-off of the fecal coliform after being discharge into the receiving waters.*

*See Response 14.*

#### **Comment 87)**

Grays Harbor is currently listed under section 303(d) of the federal Clean Water Act as not meeting water quality standards for fecal coliform bacteria because of inadequate controls of point or nonpoint sources. In addition, commercial harvesting of oyster beds within Grays Harbor has been restricted due to contamination. A TMDL study for Grays Harbor/Chehalis Watershed published by Washington State Department of Ecology in December 2002 identified the need for an overall 65% reduction in FC loading in the watershed to meet water quality standards. Weyerhaeuser was identified in the study as being one of the major point source dischargers of FC. Although their average contribution to the total FC loading was only about 4 %, sampling results from the TMDL study indicated that during a 2-day period Weyerhaeuser contributed 95% of the FC load. There were 9 days when they contributed more than 50% of the load, and 18 days when they were more than 20 % of the load. The initial TMDL study recommended a 30% reduction in the maximum daily FC discharge concentration from Weyerhaeuser's two outfalls. It is difficult to envision how the FC water quality standard will be met without a significant reduction in FC discharges from Weyerhaeuser.

A basis for the proposed increase in the allowable FC concentrations in Weyerhaeuser's discharge is apparently a modeling study prepared for Weyerhaeuser by the consulting firm CH2MHill (July 2002). As stated in the executive summary of this report:

"The model results were then used to determine at what level the mill would have to discharge to violate the more restrictive Class A fecal coliform standards for marine waters, at these two points (in the absence of any other sources).

Since Weyerhaeuser's FC contribution to the watershed has been estimated at 4% ignoring the other 96% would seem to be an invalid approach to determining an acceptable discharge rate and is the antitheses of the' TMDL approach.

#### **Response 87**

*The total yearly load taken from Table 2 of the December 2002 TMDL was based on yearly values of the monthly geometric mean. In order to compare the fecal coliform load introduced by Weyerhaeuser to the total load in Table 2 of the TMDL report, one must take the monthly geometric mean of the fecal coliform discharged by Weyerhaeuser and calculate the load. By these calculations the Weyerhaeuser contributes 4 % of the load (**See Response 81**). The other 96 percent of the load was considered. The ambient concentration of fecal coliform was included in the methodology of setting the WLA. The new limit and the WLA were determined with the new information provided by the permittee. The die-off study*

*provided by the permittee gave us a better understanding of the fate of the bacteria in the receiving waters. CH2MHill hydrodynamic modeling used a program with greater detail in modeling Grays Harbor than the model used by Ecology in their original TMDL analysis. By applying the results of the die-off study and the hydrodynamic study, we were able to determine a more appropriate WLA for Weyerhaeuser Company discharge. See **Response 14**.*

**Comment 88)**

Washington DOE seems to acknowledge in the fact sheet that the proposed higher FC limits may cause continuing problems with the oyster beds:

- “The oyster beds may be closed from time to time.” (Page 21) “
- The DOH will make the decision on the limit that protects the oyster beds using the die-off study and the hydrodynamic modeling done by Weyerhaeuser consultants. (Page 21)
- “If the fecal coliform found in the discharge is above the Department of Health closure criteria but below the proposed permit limit on a continuing basis and the oyster growers are impacted; Ecology may choose to reopen the permit or issue an administrative order to reduce the proposed fecal coliform limit. (Page 23)

Surfrider Foundation urges Washington DOE to take a conservative approach to protecting water quality and the oyster beds in Grays Harbor and, at a minimum, retain the existing permit limits for concentration of fecal coliform in Weyerhaeuser’s two outfalls.

**Response 88)**

*See respons 6. The extended mixing zone and consequently, the increased limit for fecal coliform is allowed under Chapter 173-201A. The limits are based on new information provided by the permittee. We are of the opinion that the oyster beds will be protected; however, this determination is based on modeling. If the modeling is shown to be incorrect, we wanted to make it clear that we have the authority and the intention to modify the permit or issue orders. Therefore, the proposed permit limit is retained. DOH increased the closure trigger to 85,000 count/100 mL with consideration of the die-off study performed by the permittee. Because of the increase in the DOH trigger, we believe that the oyster beds would be closed less often.*

**Comment 89)**

*The Honorable Brian Hatfield , Washington State Legislator*

Weyerhaeuser's Cosmopolis Pulp Mill is an important component of the economy of Washington's coastal counties, including Grays Harbor, Pacific, and Mason counties. The mill employs more than 250 people with an annual payroll of \$22 million. As you know, the past few years have been very challenging to the pulp and paper sector and the Cosmopolis Mill continues to struggle to remain profitable. Elimination of unnecessary costs is crucial in this difficult economic climate. Weyerhaeuser is spending in excess of \$3 million per year to



chemically treat mill wastewater to meet end of pipe bacteria limits required by their NPDES permit.

On May 16, 2002, we wrote to the Department of Ecology and Department of Health asking both agencies to,

"...carefully evaluate the scientific information developed by Weyerhaeuser since 1995, and make a reasoned, science based decision on the true ability of Cosmopolis origin bacteria to cause human health problems. Agency decisions in the mill NPDES permit and the Grays Harbor TMDL should conform to this science based assessment."

We made that request based on the overwhelming scientific evidence that had been gathered since 1995 demonstrating that mill origin bacteria did not indicate the presence of fecal material. Additionally, we are concerned that there is more potential for environmental harm to Grays Harbor resulting from the requirement to disinfect mill effluent with a chlorine-based disinfection chemical.

Since we made that request, Weyerhaeuser has completed additional studies on the fate of mill origin bacteria and on the actual movement of water within Grays Harbor. On April 9, 2003, DOE issued a draft NPDES permit for the Cosmopolis mill for public comment.

Weyerhaeuser, in cooperation with DOE, DOH, and local stakeholders, has clearly demonstrated that:

- The discharge from the Cosmopolis mill wastewater treatment system does not pose a risk to human health or impair the beneficial uses (including shellfish rearing) in Grays Harbor. More than 400 analyses of mill wastewater have documented the absence of fecal pathogens. In short, the best information demonstrates that the Cosmopolis bacteria do not even match the regulatory definition of "fecal coliform."
- Mill origin bacteria die quickly when exposed to receiving waters and environmental conditions in Grays Harbor. Controlled studies show that approximately 50% of the bacteria die instantly on contact with receiving water; with complete mortality within 44 hours. Additionally, dispersion modeling in Grays Harbor shows that mill origin bacteria concentrations at the sanitary line will not exceed levels that would require closure of shellfish harvest.

To summarize, the research clearly shows that mill wastewater bacteria do not adversely impact water quality, do not pose a risk to human health, and do not impact shellfish rearing areas.

The draft NPDES permit, however, will still require costly, and environmentally damaging disinfectant treatments by Weyerhaeuser. Accordingly, we offer the following suggestions for how the draft permit should be modified:

1. The draft permit fails to incorporate the best available scientific information. There has been no dispute over the findings and conclusions of Weyerhaeuser's research. Indeed, it appears that everyone agrees with the conclusions of their research. Permitting decisions should be true to these findings. If the Cosmopolis bacteria do not even meet the regulatory definition of "fecal coliform," the discharge should not be regulated as if they did.
2. The mill is vitally important to the economy of our region. As Legislators, we believe that DOE should aggressively seek all possible avenues to help troubled businesses in Washington, particularly those in distressed rural areas. The agency should apply its considerable discretion in implementing environmental regulations to both protect public health and beneficial water uses, and support responsible business. Permitting decisions should not casually impose costs on a permittee where no evidence of an environmental or human health issue is demonstrated (Indeed, in this case the permitting decision actually results in a degraded receiving water quality due to the inadvertent creation of a chlorinated organic compound.)
3. DOE should require an appropriate monitoring program during the permit term to document that fecal pathogens are not present in the Cosmopolis wastewater.

**Response 89)**

*All of the studies performed by Weyerhaeuser were considered in the methodology Ecology used to determine the fecal coliform limitations in the proposed permit. We were able to extend the mixing zone in order for the company to meet the limitation for fecal coliform without as much disinfection and consequently at a much lower cost than required by the current permit. The definition of fecal coliform with respect to the test performed to detect them, are bacteria that produce acid or gas from lactose in a suitable culture medium at 44.5 degrees Celsius. The bacteria in the Weyerhaeuser effluent test positive in the fecal coliform test. After they are discharged into a waterbody, there are no simple tests to differentiate among fecal coliform from warm blooded mammals and the bacteria in the Weyerhaeuser discharge. Ecology recognizes that the studies performed by Weyerhaeuser indicate that the mill's effluent is unlikely to contain pathogens. However, the testing method has not been peer reviewed nor are there any rules that establish how the data from such tests should be used in a regulatory context. In order to protect the waters of the state, protect other beneficial uses of the water, and enforce the current laws of Washington, Ecology determined that the current definition of fecal coliform is appropriate. We also tried to balance environmental quality (including reducing the chemicals generated during disinfection with chlorine), the needs of the community, and the needs of other industries in Grays Harbor, in the development of the proposed NPDES permit. We have fully evaluated the studies and used all of the studies submitted by Weyerhaeuser in the development of the fecal coliform limits in the proposed permit. Ecology regulates in terms of the potential to cause harm to the environment or health of the people. The pathogenic study went a long way in showing that the probability is low that there are pathogens in the wastewater discharge. We considered these results as part of the justification for granting an extended*

*mixing zone. We have reduced the cost of disinfection by ninety percent according company personnel. However, we are not able to totally eliminate the fecal coliform limit.*

*The Food and Drug Administration (FDA) relayed the following paragraph concerning fecal coliform to the company: "Only total and fecal coliforms are used to classify shellfish growing areas under the National Shellfish Sanitation Program (NSSP), and no exceptions to these indicators and the criteria established for using these are currently permitted in the NSSP. Criteria for allowing exceptions to the use of total or fecal coliforms have not been established. The findings and information provided on behalf of Weyerhaeuser in the final report and technical memorandum do not establish a compelling case for radically altering the intentions and requirements of the NSSP."*

*Michael Tracy, Economic Development Council*

**Comment 90)**

It is the Mission of the Grays Harbor Economic Development Council to assist local government and businesses to promote the overall economic vitality of the county and its communities. Towards that objective the EDC is focused first on the retention and growth of existing businesses followed by the attraction of new businesses. The EDC is concerned about the economic viability of the Cosmopolis Pulp Mill, which is and has been a primary economic engine of the Harbor. The future of the plant may now be in jeopardy.

More specifically, the EDC believes that actions or decisions by the Washington State Department of Ecology in the current NPDES permit renewal process for the Cosmopolis Pulp Mill will be critical to the mill's ability to remain competitive in the constantly changing global markets for pulp. For this reason, the EDC has opted to submit these comments in response to DOE's request for public comments on the renewal of the mill's NPDES permit limit. Specifically, we wish to comment on Weyerhaeuser's request for relief from the existing permit limits for fecal coliform discharge.

It should be evident to the Dept. of Ecology that Weyerhaeuser, the single largest employer in Grays Harbor, and the Cosmopolis Pulp Mill with an annual payroll of \$22 million is a cornerstone of the Harbor economy. We understand the Mill is seeking regulatory relief from discharge permit limitations established for fecal coliform. We also understand that Weyerhaeuser has under its own initiative conducted extensive research on bacteria discharge from the plant and, based on years of excellent scientific investigation, has asked Ecology to act upon these findings such that they are appropriately reflected in NPDES permit.

We believe that the request of the Weyerhaeuser Cosmopolis Mill for permit revision is credible and is based on the good science developed over many years. Additionally, we believe that Weyerhaeuser's proposal is warranted based on their reputation as a corporation and community member, which for decades has demonstrated good overall environmental

stewardship. This is evidenced by their environmental compliance record, continuous and significant improvements in environmental performance, and by the recognition they have received from industry and government as a leader in environmental technology and innovator in their business segment.

We ask that Ecology act aggressively within the bounds of its charter to protect water quality based on the sound and credible scientific information that has been developed by Weyerhaeuser on the fecal coliform issue. Specifically, we respectfully request that DOE adjust the permit limits in the mill's NPDES permit for fecal coliform to reflect the results of these studies. Doing so will better balance the environmental benefits with the costs associated in achieving them.

It is critical to our community that the state support our efforts to revitalize and invigorate our rural economy. We respectfully request that DOE act on the scientific data and analysis conducted by Weyerhaeuser and adjust the permit limits accordingly.

**Response 90)**

*We are cognizant of the economic situation of Weyerhaeuser Pulp Mill at Cosmopolis and the function of the mill in Grays Harbor County. The proposed permit used a method to develop the fecal coliform limit that balances the requirements to control fecal coliform, the need to reduce chlorinated organic compounds, and the economic interests of all users of Chehalis River/Grays Harbor system. We used all of the discretion that was appropriate in developing the fecal limits in the proposed permit. See response 89.*

*Frank Prochaska, Association-Of-Western-Pulp-And-Paper-Workers*

**Comment 91)**

The Association of Western Pulp and Paper Workers (AWPPW) represent the hourly employees at Weyerhaeuser's Cosmopolis mill. We urge DOE to renew the NPDES permit with discharge limits for fecal coliform bacteria that eliminate the need for unnecessary and costly disinfection. The AWPPW is aware of the research Weyerhaeuser, DOE and DOH has completed that shows the mill does not discharge bacteria that cause a risk to human health or degrade the quality of water in Grays Harbor. We appreciate that the draft permit acknowledges these findings. The draft permit, however, still requires costly disinfection treatments by the mill. Unnecessary costs hurt the ability of the mill to compete. Accordingly, we urge DOE to adjust the final permit to further reduce disinfection costs. This is important to the economics of the mill and, obviously, to our members. AWPPW is confident that Weyerhaeuser will take the steps necessary to comply with the permit guidelines to protect the health and environment of Grays Harbor.

Pulp and paper workers understand that our jobs depend upon the vitality of the environment. The Grays Harbor region not only provides jobs for our union members; it is also a source of

food and recreation for their families. This concern for jobs and health provides our union with an unique perspective on environmental issues and an interest in the permit process.

Scientific studies and monitoring conducted by the Department of Ecology and by Dr. Mansour Samadpour, a University of Washington microbiologist, show that the mill wastewater does not contain bacteria that cause a risk to human health. Additionally, their research has also shown that the mill's origin bacteria die quickly in Grays Harbor and do not pose a risk to important shellfish growing areas of Grays Harbor. The AWPPW believes that the permit can be modified to reflect these findings. We also believe that the Cosmopolis mill maintains a commitment for a safe living and working environment.

The Cosmopolis mill has been a vital part of the region since it began operations in 1957. The mill's importance has only increased as the regional economy has declined. Since 1973, the unemployment rate in Grays Harbor County has never dipped below the state average and real wages-since 1982-have fallen more than 19 percent for workers in the county. On average, workers in Grays Harbor County earn 27 percent less than other workers across the state and are paid 44 percent less than workers in King County. However, the Weyerhaeuser Cosmopolis mill continues to provide good family-wage jobs; paying more than \$22 million in wages last year.

Workers believe the Cosmopolis mill enhances the economic and environmental health of the region, and the union encourages DOE to renew the NPDES permit with discharge limits that reflect the current science and eliminates the need to incur unnecessary costs.

**Response 91)**

*See Responses 89 & 90.*

*Robin Downey, Pacific Coast Shellfish Growers Association*

**Comment 92)**

Speaking on behalf of the shellfish industry in Grays Harbor, it has come to our attention that the Department of Ecology intends to exempt the Weyerhaeuser Company for point and non point discharges and the need for an NPDES permit. As a result, the effluent released from Weyerhaeuser will not be factored into the Total Minimum Daily Load equation for this impaired body of water.

We appreciate the argument that Weyerhaeuser provides jobs in the local economy, but by the same token, so does the shellfish industry, and allowing this exemption has serious potential to cause closures of shellfish growing areas resulting in loss of jobs and local revenue. Furthermore, exempting any discharge from the TMDL program will place unfair and disproportionate levels of responsibilities on the remaining NPDES permit holders. We question whether this exemption is even legally allowable under the Clean Water Act.

**Response 92)**

*Weyerhaeuser Company has not been exempted from the NPDES permitting program nor from the TMDL requirements. We have written a science based permit that determines the WLA within the TMDL. See Response 14*

**Comment 93)**

The position of Weyerhaeuser that the source of fecal contamination generated by their operation is not human in origin and therefore should not be factored into the TMDL equation is not a valid argument as far as the shellfish industry is concerned. The National Shellfish Sanitation Program, overseen by the U.S. Food and Drug Administration, and implemented in Washington by the Department of Health, sets standards for water quality and shellfish harvest based on total fecal counts, regardless of source. This is immutable. The industry lives or dies based on these total counts.

**Response 93)**

*Comment noted. See Responses 14, 22, 24, 25, 26, & 89.*

**Comment 94)**

If Department of Ecology continues down this path and allows Weyerhaeuser an exemption for their discharges, the shellfish industry may have no choice but to pursue legal remedy under the Clean Water Act.

**Response 94)**

*Comment noted. See Response 14.*

*Dr. Mansour Samadpour, IEH, Inc.*

**Comment 95)**

#1 - Ecology proposes end-of-pipe limits for fecal coliform. The definition of "fecal coliform" in the Washington water quality standards is:

"Fecal coliform means that portion of the coliform group which is present in the intestinal tracts and feces of warm-blooded animals as detected by the product of acid or gas from lactose in a suitable cultural medium within twenty-four hours at 44.5 plus or minus 0.2 degrees Celsius."

As you are well aware of the definition of fecal coliforms, as regulatory indicators of microbiological quality, is based on a series of assumptions, chief amongst which are direct correlation between indicators found in a sample and fecal contamination of the said sample, and correlation between the presence of fecal coliforms in a sample, and the

presence of human pathogens in the same sample. For instance high levels of fecal coliforms in a sample would indicate potential human health hazard (due to fecal contamination and presence of human pathogens), while low numbers of fecal coliforms would suggest the absence of hazardous levels of pathogens and low levels of contamination. As the term fecal coliforms are defined in regulatory microbiology, the microorganisms that are identified as fecal coliforms in the Mill's effluent do not conform to the definition. As such, there is no evidence to indicate the presence of fecal coliform in the Cosmopolis mill treatment system.

Results of extensive scientific studies of the sources and nature of fecal coliforms in the Cosmopolis mill's effluent showed that the source of the fecal coliforms in the Mill's effluent are the bioponds. In other words, the presence of bacteria in the treatment system and wastewater discharge which present as fecal coliforms has nothing to do with the Mill's raw industrial wastewater, rather they are the consequence of the secondary activated sludge treatment process.

The fecal coliforms in the Mill's effluent can be traced to the original seed that was used to start up the bioponds almost forty years ago. Their presence does not correlate in any shape or form with input of fecal material in the system, nor does it have any correlation with the presence of microbial pathogens. The so called fecal coliforms in the Mill's discharge simply do not fulfill the scientific or regulatory definition of fecal coliform as indicator organisms.

The pertinent facts regarding the Mill's industrial wastewater treatment plant are as follows:

1. The system receives and treats industrial wastewater. Sanitary sewer and storm drains do not enter the industrial wastewater treatment system.
2. The bioponds do not attract animals, as such there is no input of animal fecal material.
3. Analysis of more than 400 wastewater samples from the Mill for bacterial pathogens that were likely to occur in the Mill's effluent, based on the nature of the influent and the original source of the seed (cow manure) did not find any human pathogens in the wastewater samples.
4. Analysis of the Washington State Department of Health water quality data from Grays Harbor, and microbial source tracking data show that the shellfish beds in the conditionally approved areas are not impacted by the Mill's effluent.
5. The above conclusions were corroborated by the results of the coliform die-off study and a circulation modeling study.

These conclusions are drawn from studies reported on in *"Final Report - Analysis of the Available Scientific and Public Health Data Regarding the Cosmopolis Mill's Effluent: The Public Health Significance of the Effluent, and its Impact on Water Quality in Grays Harbor, Shellfish Growing Waters, and Shellfish,"* Institute of Environmental Health, September 2002.

The argument that fecal coliforms are fecal coliforms regardless of their source, has repeatedly been made to counter the results of our scientific studies, claiming that the mere presence of fecal coliforms, regardless of their correlation with input of fecal material in the system, and the lack of correlation between their presence and the presence of pathogens, in itself is significant. This product from this line of thinking has been that putting fecal coliform limits on the Mill's discharge is necessary, citing the inability of the regulatory agencies to differentiate between the fecal coliforms of Mill origin vs. those coming from humans and animals in the area. This line of

reasoning would have merited consideration, if indeed fecal coliforms were an issue as far as their impact on the shellfish beds in the "Mill's impact zone". The fact remains that the shellfish beds in the conditionally approved areas are not impacted by fecal coliforms from the Mill. This, together with the demonstrated lack of presence of human pathogens, should allow the regulatory agencies to classify the Mill a point source of no public health significant, hence, removing the fecal coliforms from the NPDES permit all together.

#2 - Our characterization study for the presence of pathogens in the mill treatment system was specific to 13 known bacteria pathogens typically associated with human sewage. Available information supports that this is a sufficiently robust examination for the presence of human pathogens. The Department of Ecology should not claim that regulation of the Cosmopolis mill wastewater for "fecal coliform" is necessary because the examination for all specific human pathogens is incomplete.

The rationale behind the testing the Mill's wastewater samples for specific group of bacteria pathogens is as follows. There are five major classes of microbial pathogens: bacteria, viruses, parasites, fungi, and prions.

It is both unnecessary and impractical to test any sample for a wide range of pathogens, the list could include thousands of microorganisms. The decision on what to test for is based on several factors including the nature of the sample, the sources of microbial pollution for the samples which are to be analyzed, the universe of microbial pathogens that are present in the sources, and the microbes that are pathogenic to humans.

Given the fact that there are no human or animal fecal input into the bioponds, and the original seed was cow manure, several decisions regarding the target organisms can be made:

1. There is no need to test for human viruses. Their presence is not indicated in the Mill's wastewater samples since they are not present in cow manure
2. It is not necessary to test the Mill's wastewater for parasites. Although the cow manure could contain a host of human parasites, none are free living, a combination of continuous dilution and time (about forty years), would make it impossible for even the resistant forms of these parasites to be present in the Mill's effluent.
3. Given the nature of the source (cow manure) and routes of human exposure to the pathogens (recreational contact, or foodborne), pathogenic yeasts and molds of bovine origin are not expected to be of concern in the bioponds. Mainly due to the fact that bovine feces is an unlikely source for human fungal pathogens that can be transmitted by food or water. Additionally, even if pathogens were present they can not compete effectively with masses of bacteria and environmental fungi, algae, and other microorganisms that are present in bioponds.
4. Prions are proteins that are the infective agent for the Mad Cow Disease (Bovine Spongiform Encephalopathy, BSE). Again, in the unlikely event that one of the cows whose manure was added to bioponds was infected with the disease and there was a level of prions in the manure, there is simply no mechanism for the prion proteins to increase in levels in the bioponds. Forty years of continuous dilution would have resulted in elimination of the prions in the bioponds.



The only class of microbial pathogens which could possibly be present in the bioponds is bacterial pathogens. Although the most obvious targets are the enteric food and waterborne pathogens, such as *E. coli* 0157:H7, *Campylobacter* and *Salmonella*, we have used a much broader group of pathogens as targets for testing the Mills wastewater. Although it can be argued that a limited number of samples have been tested (more than 400 samples), it has to be realized that the sampling plan was seven times more stringent than a Case 15 sampling plan, which is the most stringent sampling plan used to test lots of foods for the presence of *E. coli* 0157:H7 in foods. The Case 15 sampling Plan (ICMSF, 2002) dictates taking 60 samples from a given lot, all of which have to be negative for the presence of *E. coli* 0157:H7, for a lot to enter the chain of commerce. We believe that both the number of samples, and the list of organisms which were tested for were more than adequate to address the issue of pathogens in the Mill's effluent. Another factor to consider is the fact that analysis of epidemiological data (IEH, 2002) corroborates the lack of pathogens/human health hazards associated with the Mill's discharge.

In conclusion, the available scientific data strongly indicates that the Mill's effluent has no adverse microbiological impact on the receiving waters. Attempts to regulate the fecal coliforms in the mill's effluent will inadvertently force the Mill to use established control measures such as chlorination of the effluent, which can only be detrimental to the environment. In the absence of public health significance, and given the natural die off the fecal coliforms in the effluent, chlorination will have zero public health benefit and will result in formation of chlorination byproducts.

**Response 95)**

*See Responses 22, 24, 25, 26, 27, 89 & 90. We considered the production of chlorinated organic compounds produced in the disinfection process. As long as the use of Grays Harbor for commercial oyster growing is limited by fecal coliform and regulated by FDA, we do not believe it would be equitable to use the new methodology. We also tried to strike a balance between the need to reduce AOX and the need to protect the oyster beds. We are of the opinion that we have proposed an equitable permit.*

*Robert W. Schanz, Secretary, Chehalis River Council*

**Comment 96)**

The Chehalis River Council is a volunteer-run nonprofit organization dedicated to the preservation of natural resources in the Chehalis Basin. Water quality is one of our key areas of focus. We have reviewed the new Weyerhaeuser Cosmopolis Mill NPDES permit, and are concerned that the proposed permit conditions will result in degradation of water quality in Grays Harbor.

The permit is proposing an extended mixing zone of 4300 feet for fecal coliform, which allows the mill to increase its loading of fecal coliform into Grays Harbor. In justifying this increased loading, Ecology argues that Grays Harbor has the capacity to absorb the higher loading. This is completely at odds with the conclusions of Ecology's TMDL for Grays Harbor, which found that the total loading of fecal coliform to the harbor must be reduced to

meet water quality standards. A water body with a TMDL is by definition unable to accept additional loading, and the purpose of a TMDL cleanup plan is to reduce loadings from all point and nonpoint sources. We believe it is unfair to ask dairies, homeowners, and other upstream sources in the Chehalis basin to participate in the cleanup plan, while allowing a source that discharges directly into the harbor to increase its loading.

- a) What is the legal basis for your exemption of this facility from the requirements of the TMDL, which action appears to be in direct conflict with the Clean Water Act?

**Response 96a)**

*Weyerhaeuser was not exempted from the TMDL. The WLA and the permit limit were determined simultaneously.*

The permit further argues that fecal coliform from the mill makes up less than 4% of the total load to the harbor, and can therefore be increased. This is a dangerous conclusion in a basin where fecal coliform is derived from numerous sources, none of which make up a large percentage of the total load. Imagine every dairy operation or septic tank owner in the basin arguing that their discharge makes up only a tiny percentage of the total load, and therefore is not worth addressing. Again, this raises the issue of fair and equitable treatment of a source under the conditions of a TMDL cleanup plan.

**Comment 96b)**

- b) In addition, as the comment letter of June 5, 2003 by Surfrider Foundation points out, on different days during the December 2002 TMDL study, the Cosmopolis Mill contributed from 20% - 95% of the total load of FC's entering Grays Harbor, and this is far from insignificant.

**Response 96b)**

*See Response 87.*

The extended mixing zone was proposed as an alternative to enhanced chlorine treatment. It was stated that the effluent is not amenable to treatment with various forms of radiation. Was effluent treatment with ozone or cross-flow filtration considered? Both methods can be highly successful in destroying or removing bacteria from waste streams.

- c) We believe all possible technological innovations should be seriously considered. Our preference, of course, is for the Cosmopolis Mill to operate without threatening the health of the harbor or the livelihood of the oyster growers.

**Response 96c)**

*The high wastewater flow prohibits filtration as being economical. Many methods of disinfection and/or control of fecal coliform were considered. See Response 71 & 107.*

We are also concerned that the permit does not provide adequate protection to oyster growers in the harbor. This is a key beneficial use within the harbor, and closures from fecal coliform have been a persistent problem. The permit appears to leave protection of the oyster beds up to the.

- d) Department of Health, stating that *"The DOH will make the decision on the limit that protects the oyster beds based on the hydrodynamic modeling done by Weyco's consultants.... The oyster beds may be closed from time to time. However, the frequency is expected to decrease"*. Given that the amount of FC's released to the harbor is expected to increase under the terms of this permit, on what basis do you make this claim that the frequency of shellfish harvest closure will decrease? We believe that the Clean Water Act requires the permit to explicitly address protection of this important beneficial use.

**Response 96d)**

*DOH has raised their trigger used in closing the oyster beds from 20,000 to 85,000 colonies/100 milliliter by using the die-off study; therefore, the closure rate should decrease from the closure in the previous permit.*

In conclusion, we do not believe that this NPDES permit provides adequate protection of water resources and beneficial uses in Grays Harbor. The permit should be revised to be consistent with the directives of the Clean Water Act and the Grays Harbor TMDL cleanup plan.

**Response 96e)**

*The water quality criteria are met for fecal coliform for the Class B marine water and at the A/B boundary. We have balanced the need of reducing the production of AOX and the need to control fecal by determining the proposed permit limit for fecal coliform for Weyerhaeuser Company discharge. See Responses 6, 9, 10, 14, 16, 22, 24, 25, 26, 49, 53, 54, 61, 71, 81, & 89.*

*Laurie Valeriano, Washington Toxics Coalition*

**Comment 97)**

Overall, we do not think this permit does enough to minimize the impact of this pulp mill on water quality and to move the facility towards the Clean Water Act goal of zero discharge. This mill discharges into Gray's Harbor, where water quality standards for fecal coliform and

dioxin have been exceeded. Yet Ecology is proposing a draft permit that increases the area over 2 times the current permitted area where the mill can violate water quality standards for fecal coliform.

**Response 97)**

*The water quality criteria for fecal coliform are met at the edge of the extended mixing zone and at the A/B boundary. The extended mixing zone is for fecal coliform **only**. The WLA was determined during the drafting of the permit. The cleanup plan for Grays Harbor is scheduled for completion in 2005. See Response 55. The WLA for the TMDL and NPDES permit limits were determined simultaneously.*

*Grays Harbor is not presently listed for dioxin on the 303d list. Grays Harbor was listed in the 303d list in the early 1990 for dioxin. The WLA in the current permit brought Grays Harbor into compliance for dioxin. Dioxin has been below the detection limit for the past twelve years. The dioxin discharge is regulated under the wasteload allocation for dioxin set for the Grays Harbor waterbody in the last permit. Also, 2,3,7,8-TCDD and 2,3,7,8- TCDF are regulated at the bleach plant discharge point into the raw wastewater stream. The proposed permit requires that 2,3,7,8-TCDD and 2,3,7,8- TCDF be non-detect at the bleach plant discharge point into the wastewater stream. The previous permit required a non-detect for 2,3,7,8-TCDD at the final effluent.*

*The WLA for dioxin has been met. Dioxin levels are actually decrease since the mill will be able to further reduce the amount of chlorine that is used for disinfection.*

**Comment 98)**

Also, Ecology is basing some of the permit limits on a technology standard (chlorine dioxide) that will continue to allow dioxin and furans to pollute Gray's Harbor.

**Response 98)**

*The Cosmopolis mill is a dissolving sulfite mill that produces 59 percent dissolving grade, 30 percent specialty grade, and 11 percent paper grade pulp. The dissolving sulfite grade pulp is brighter than the specialty grade or paper grade pulp. The specialty grade pulp is more similar to the dissolving grade pulp than the regular paper grade. Because of this similarity and the fact that the dissolving and specialty grade pulps with high brightness are 89 % of the total production verses 11 percent for paper grade, we chose to use the specialty grade's technology for the entire production in the determination of AKART for the bleaching method.*

*The dissolving grade pulp is brighter than specialty grade pulp; therefore, it is appropriate to use the specialty grade effluent guidelines for all of the pulp made at the mill. The 1998 effluent guidelines state that elemental chlorine free (ECF) bleaching is considered to be the Best Available Technology Economically Achievable (BAT) for production of specialty grade*

*pulp. Ecology's Permit Writers Manual recommends that federal effluent guidelines promulgated within five years can be equated to all known, available, and reasonable treatment (AKART). The factsheet equated BAT from the 1998 guidelines to AKART for the entire production since there are no effluent guidelines for dissolving grade pulp. It is expected that ECF bleaching will be the bleaching method for the dissolving grade sulfite pulp mills since the Cosmopolis mill is the best performing mill in the sulfite dissolving grade subcategory.*

*With the information that we have, the TCF bleaching method is not reasonable for the Cosmopolis pulp mill at this time due to cost and the products being made at the mill. We determined that the ECF was AKART in consultation with EPA. AKART does not require innovative or untried technologies. The AKART determination stands.*

*There is no evidence that the water quality criteria for dioxin are being exceeded in Grays Harbor. Nevertheless, the proposed permit requires the company to investigate the feasibility of TCF bleaching in the future. The limit in the proposed permit meets the WLA established for dioxin.*

**Comment 99)**

In addition, according to Ecology's latest Toxics Release Inventory data, the mill reported releasing 166,421 pounds of pollutants to the water in 2001, including lead, nitrate compounds, ammonia, polyaromatic compounds, and manganese .

**Response 99)**

*Comment noted.*

**Comment 100)**

The impacts to Gray's Harbor are significant, particularly since the quality of the water in Gray's Harbor directly impacts an industry that relies on clean water for its survival-the oyster industry. We understand and greatly appreciate the importance of the Weyerhaeuser mill to the local economy, but the community and other businesses should not be forced to choose between clean water and jobs. We can have both if Ecology does its job to enforce the law and the company invests in technology for the long haul that will reduce and eliminate water pollution.

**Response 100)**

*See Responses 10, 14, 22, 24, 25, 50, 51, & 89. This permit provides for clean water for the local community, protects the oyster growers, reduces disinfection of the effluent, and reduces disinfection cost to the mill by about 90 %.*

**Comment 101)**

We request that Ecology strengthen this permit and put this mill on path towards zero discharge. Our recommendations are consistent with the Clean Water Act and with Ecology's policy to eliminate persistent toxic chemicals. We ask that:

The technology based permit limits should be based on totally chlorine-free (TCF) technologies. The first step on the path towards zero discharge for mills is to eliminate all chlorine compounds used in the bleaching process. TCF technology eliminates dioxin and furan pollution as well as chlorinated organic pollution (AOX). AOX represents a significant amount of daily pollution from the mill. While it is a good step for Ecology to require a TCF study, this study won't be completed for three years. Furthermore, Ecology inappropriately applied the specialty papergrade standard of chlorine dioxide technology in its AKART analysis when it should have applied TCF technology. We ask that at the very minimum TCF technology standards apply when papergrade sulfite pulp is being produced at the mill. Ecology should also require a faster timeline for the TCF study of 12 months and have it specifically address the dissolving sulfite portion of production.

**Response 101)**

*See Responses 107, 109, & 110. Three years is the appropriate duration for the TCF study since the company will have to produce samples of TCF pulp for their customers to try in order to ascertain if their customers would purchase TCF pulp. The AKART determination is discussed in response 98.*

**Comment 102)**

Ecology evaluates all technologies for addressing the fecal coliform problem. Ecology did not include ozone disinfection in the AKART determination for fecal coliform. Ecology should re-evaluate all of the available technologies for the final AKART determination.

**Response 102)**

*See Responses 50, 51, 71, & 107. The permittee had considered ozone as a disinfectant. It is not an effective disinfectant for wastewater with high suspended solids.*

**Comment 103)**

The size of the mixing zone for all parameters must be minimized in accordance with requirements and prohibited for those substances that are persistent bioaccumulative toxics (PBTs). In addition, there must be an analysis provided and a decision made by Ecology that, "the mixing zone does not have a reasonable potential to result in a loss of sensitive or important habitat, substantially interfere with the existing or characteristic uses of the waterbody, result in damage to the ecosystem, or adversely affect public health."

**Response 103)**

*See Response 61. Chapter 173-201A allows a mixing zone and defines how to set the dimensions. The extended mixing zone is for fecal coliform **only** and was kept as small as possible. Chapter 173-201A WAC was adopted to protect beneficial uses of state waters. The reasonable potential analysis conducted on the effluent showed that chemicals detected in the effluent did not violate any water quality criteria listed in Chapter 173-201A WAC. The dioxin congener 2,3,7,8 TCDD has not been detected above the detection limit for the term of the current permit. There is a waste load allocation (WLA) below the detection limit for 2,3,7,8 TCDD in the current permit and the proposed permit. The WLA is considered protective of the beneficial uses of the receiving waters. The proposed permit limit for dioxin is at the bleach plant effluent. Because the water quality criteria for dioxin is below the detection limit, the technology limit is applied to dioxin. Therefore, dilution was not considered in the limit for dioxin.*

*See pages 19 and 20 of factsheet concerning loss of sensitive and important habitat.*

**Comment 104)**

Ecology defaulted to the technology already in place at the Cosmopolis mill as AKART. Ecology's AKART analysis is largely based on EPA's cluster rule requirement for specialty grade pulp mills. The standard for these mills is chlorine dioxide (Elemental Chlorine Free or ECF), while other papergrade sulfite mills are TCF. Ecology took the standard developed for these mills, discounted TCF technologies without specific further analysis for the Cosmopolis mill and determined that AKART was what the mill already has in place (oxygen bleaching/extended delignification plus chlorine dioxide). While the determination takes a step beyond basic ECF technology, it does not achieve all of the environmental benefits of TCF technology as mentioned above.

**Response 104)**

*The Cosmopolis pulp mill is not a paper grade mill. The mill is a dissolving grade pulp mill. It makes and sells the chemical cellulose for use in the production of toothbrush handles, screw driver handles, photographic paper, and other products. See Responses 98 & 110. Dissolving grade pulp customers require a cleaner and brighter pulp than those that use specialty grade pulp.*

**Comment 105)**

Ecology inappropriately used the specialty category as the primary driver for AKART. It is our understanding from discussions with the EPA and from reviewing the official record, that the specialty sulfite category was created in deference to the Georgia Pacific mill in Bellingham and the Fraser paper mill in Wisconsin; both sulfite mills claimed they could not manufacture their product lines using TCF technologies. TCF is the technology standard for papergrade sulfite mills, other than specialty grade. EPA created a special category for

Georgia Pacific and the Cluster Rule states that in order to qualify for this category, mills must produce 25 percent or more of their pulp for these kind of products. Because of the Fraser Paper mill, which makes fine paper, this category also included an allowance for mills that produce a majority (50% or more) of high brightness pulps to be granted specialty grade status. According to the percentages provided in the fact sheet, Cosmopolis would only be making 41% of their pulp at high brightness, although it was unclear from the information as to whether the entire 30% specialty grade was 91 ISO brightness. The total amount of high brightness pulp could actually be less. Since the mill does not make a majority of their pulp at high brightness, the ECF determination for this category is not appropriate to apply in the AKART analysis.

**Response 105)**

*The dissolving grade is higher brightness. The percent of pulp with ISO greater than 91 is 84 percent including dissolving grade and specialty grade pulp. See Response 98. The paper grade pulp produced has a brightness of greater than 91 ISO. The AKART determination stands.*

**Comment 106)**

TCF should be considered as AKART for this facility because this is the federal requirement for papergrade sulfite mills. While the exact mix of pulp products may not be produced at other mills, EPA found at least one mill in the United States and 13 in Europe using acid cooking liquors of calcium, magnesium, or sodium sulfite that are using TCF bleaching processes. The mills produce a full range of paper products at up to 91 ISO brightness using TCF bleaching. EPA found these mills are able to produce the same products using TCF technology that they produced prior to converting to TCF, with no negative impact on product quality. At the very minimum, the Cosmopolis mill should be required to operate with TCF technology when producing papergrade sulfite pulp.

**Response 106)**

*That is not what EPA reported to Ecology. They relayed to us that the Cosmopolis mill was the best performing mill in their category. The paper grade pulp also has a higher brightness than ISO 91 but with different characteristics. See Response 98. The AKART determination stands.*

**Comment 107)**

First, it was extremely difficult from the information provided in the permit and fact sheet to get a full understanding of the fecal coliform problem and the AKART determination made by Ecology. For example, there was information missing about the permit exceedences for fecal coliform and only two or so lines in the fact sheet about how a light source will not disinfect the effluent. Because this issue is so important on a number of different levels, we ask that Ecology do a much more aggressive job at determining the best technology for



reducing and eliminating fecal coliform discharges. We also ask that the analysis include ozone disinfection.

**Response 107)**

*See Response 82 for exceedences.*

*For almost ten years Ecology has been working with the company on the fecal coliform problem at the Cosmopolis pulp mill. The company has made progress in solving the problem but has not been totally successful. The company has looked at various forms of light and radiation. Because the effluent contains many light absorbing chemicals that are highly colored at low concentrations, the endeavor has been unsuccessful. The company has looked at other chemicals as well as the operational controls of the wastewater treatment system. It has been discovered that when the effluent contains high total suspended solids (TSS) it usually also contains high fecal coliform. With this knowledge the company has investigated ways to ensure a high removal of the solids. Methods of TSS removal considered were retrofitting incline plates into the secondary clarifiers, control of the polysaccharides content of the treatment system, and installing more settling area. The company investigated ozone, ultraviolet, chlorine dioxide, MIOX, and bromination disinfection methods. The company investigated improved wastewater treatment performance to enhance good settling characteristics of the biota using the addition of micronutrients. No improvements were found. The company investigated operational controls to raise the food to mass (F/M) ratio and the solids settled much better. Their goal is to keep the F/M ratio above a set value. Based on these investigations, Ecology concluded that the wastewater treatment system meets the AKART requirements. Likewise, with either lowering the pH and/or chlorination of the effluent, the wastewater treatment system is at AKART for fecal coliform.*

**Comment 108)**

One way in which Ecology should be implementing its PBT elimination policy in NPDES permits is by eliminating mixing zones for persistent bioaccumulative toxic (PBTs) chemicals. PBTs, such as dioxin and furans, do not readily breakdown or dilute. Instead, they build up over time and increase in concentration as they move up the food chain. We ask that Ecology eliminate the mixing zones for PBTs in this permit.

**Response 108)**

*Mixing zones were not considered in setting the limits for either dioxin or furan. Both of the limits were technology based. Since the water quality criterium for dioxin is 0.014 ppq and the dioxin concentration is always below the detection limit in the effluent, there is no way to determine if the water quality criteria are being met. Since they will have to disinfect their effluent with chlorine containing compounds to meet the fecal coliform limit, a nondetect limit for AOX is not practical. See Response 27.*

**Comment 109)**

We are also concerned that Ecology did not fully apply the mixing zone regulation when proposing the mixing zones for this permit. Specifically: According to **WAC 173-201A-100 (2)**, "A discharger shall be required to fully apply AKART prior to being authorized a mixing zone."

**Response 109)**

*The bleaching method and the mill wastewater treatment system meet the AKART requirements. Therefore, the mixing zone is appropriate and is kept in the proposed permit. See Response 107.*

**Comment 110)**

We believe that TCF should be considered AKART (at least for the papergrade sulfite pulp production) and that Ecology has not fully evaluated AKART for fecal coliform. Ecology must rectify this problem before issuing a mixing zone.

**Response 110)**

*See Responses 98 & 107. We chose not to require two types of bleaching because one cannot separate nor account for paper grade produced wastewater and the other 89 % of the wastewater produced. The mill makes pulp in response to orders. They may make paper grade for a few days at a time and then start making specialty grade pulp or dissolving grade pulp. The wastewater treatment system has a retention time of about seven days. For the time that paper grade pulp is being made and travels through the wastewater treatment system, a large portion of wastewater being discharged would be wastewater from the production of specialty grade or sulfite grade pulp. In fact, unless the paper grade pulp was produced for a time greater than a retention time period, there would be no time that the majority of wastewater discharge would be from the paper grade pulp production. In other words, wastewater from the paper grade pulp production would always be commingled with wastewater from the other types of production.*

**Comment 111)**

WAC 173-201A-100(4) states, "No mixing zone shall be granted unless the supporting information clearly indicates the mixing zone would not have a reasonable potential to cause a loss of sensitive or important habitat, substantially interfere with the existing or characteristic uses of the water body, result in damage to the ecosystem, or adversely affect public health as determined by the department." Where is this analysis and Ecology's official determination? A recent Pollution Control Hearings Board decision regarding Ecology's industrial stormwater permit case supports the importance of this section of the rule. We ask an analysis be provided that meets the requirements of this section.

**Response 111)**

*See pages 19 and 20 of factsheet concerning loss of sensitive and important habitat and AKART determination. See Responses 98, 107, 109, & 110.*

**Comment 112)**

WAC 173-201A-100(6) states, "The size of the mixing zone and the concentrations of the pollutants present shall be minimized." In the case of fecal coliform the draft permit proposes an increase in the size of the mixing zone. What is being done to minimize the size of the mixing zone for fecal coliform? It is unclear from the fact sheet why such a large mixing zone is needed. In addition, why are the proposed limits greater than the performance levels achieved by the facility?

**Response 112)**

*See Response 61. The rationale for a larger mixing is explained on page 19 of the factsheet. The fecal data used to determine the effluent limit was taken from the fecal coliform unchlorinated bioponds' effluent test data. The increase in the final effluent limits from the biopond performance because there are two things happening to the fecal coliform bacteria as water is transferred from the bioponds discharge to the location of the final discharge point. The first is dilution of the biopond effluent with the other flows from the mill and the second is regrowth of the fecal coliform in the pipe from the mill to the final discharge point. The line from the mill to the final discharge point is about three miles. The dilution causes a decrease in the amount of fecal coliform in the final effluent and the regrowth causes an increase. The net result is that the fecal coliform bacteria count will increase from the bioponds to the final discharge point. The die-off study and the hydrodynamic study (Pages 21 – 25) were also used in the determining the final effluent limits for fecal coliform. The permittee tested for human pathogens as discussed in the factsheet and found none. The absence of human pathogens further supports the granting of an extended mixing zone. As a consequence of the increased mixing zone size, the production of AOX will be decreased.*

**Comment 113)**

Finally, we urge Ecology to seriously consider these critical issues as the people, wildlife and resources of Washington and the Northwest are at stake. We look forward to Ecology finding the courage and using the law as it was intended to require the best, cleanest technology for this facility -TCF.

**Response 113**

*Comment noted. See Responses 98, 107, 109, & 110.*

*Craig Zora, Department of Natural Resources*

**Comment 114)**

The mixing zone will be expanded from .81 to 1.86 miles. Outfall 001 discharges process water from a pulp mill utilizing chemicals that can accumulate in sediments. Outfall 002 discharges stormwater laden with chemicals that can accumulate in sediments. The DNR must exercise due diligence in protecting the citizens of Washington from any liability related to contaminated sediments so we suggest baseline sediment sampling be conducted at outfall site 001 and 002 as a condition of the permit being approved.

**Response 114)**

*It is not true that the extended mixing zone is 1.86 miles. The permittee suggested that number but we kept the 1300 meters (0.81 miles) size in the permit. The permittee conducted a baseline sediment sampling and study plan and performed the sediment sampling and analyses in the permit issued in 1991. After review of the data, Ecology determined that a sediment study would not be required in the proposed permit. We are of the opinion that the sediment study performed in the 1991 permit is still valid and another study would not be useful at this time.*

*Randal M. Cox, Weyerhaeuser Company - supplemental comments*

**Comment 115)**

Ecology's preparation of the "response to comments" received on the draft permit should provide a regulatory analysis of Washington's definition of "fecal coliform" (WAC 173-201A-020.) Ecology should detail the scientific studies commissioned by Weyerhaeuser which effectively characterize outfall 001 bacteria discharges in relation to the "fecal coliform" definition. The agency should clearly articulate a regulatory conclusion that the best scientific information indicates Weyerhaeuser's outfall 001 discharge does not include bacteria that meet the regulatory definition of "fecal coliform." Available scientific information indicates the outfall 001 bacteria would best be characterized as "non-mammalian feces, non-pathogenic, heterotrophic coliform bacteria."

**Response 115)**

*See Responses 22 & 24. We used the data from all the studies submitted by Weyerhaeuser to set the fecal coliform limit.*

**Comment 116)**

Weyerhaeuser's proposed fecal coliform limitation for outfall 001 is admittedly inconsistent with the company's presentation that these bacteria are not "fecal coliform." This proposal

unfortunately perpetrated the perception that outfall 001 bacteria should or could be labeled as “fecal coliform.” Revisions to Washington’s Water Quality Standards now give strong regulatory support for a more direct and relevant assessment of the possible health effects of outfall 001 bacteria. Weyerhaeuser would now propose an alternative permit requirement to monitor the secondary treatment system (or outfall 001) on a monthly frequency for the presence of bacteria pathogens. No effluent limitation for bacteria would be imposed (although any future indication of the presence of mammalian fecal pathogens would trigger a re-opening of the permit to include appropriate requirements.)

**Response 116)**

*Comment noted. See Responses 12, 22, & 24*

**Comment 117)**

A May 12, 2003 Department of Ecology letter from Tom Fitzsimmons to the group of Washington legislators known as the “Coastal Caucus” presents a conclusion which is seemingly important, but which is inconsistent with Ecology’s Fact Sheet for the proposed permit and other available information. This letter is included in the public comment package on this draft permit.

**Response 117)**

*We fulfilled the intended purpose of the referenced letter. See Responses 12, 14, 22, 24, 25, 27, & 89. Copies of the correspondence you refer to (April 13, 2003 letter from the Coastal Caucus to Ecology Director Tom Fitzsimmons, the director’s response dated May 12, 2003, and the Coastal Caucus reply dated June 6, 2003 are included at the end of this document.*

**Comment 118)**

EPA’s June 9 comment letter suggested that Ecology’s AKART determination in support of an appropriate fecal coliform effluent limitation should consider ozone disinfection. Weyerhaeuser completed studies in 1988 and 1997 to evaluate bacteria disinfection technologies. These studies, which were shared with the Department of Ecology, included ozone disinfection. The general conclusion was that ozone was a less effective disinfectant than other alternatives and was extremely expensive to install, operate and maintain.

**Response 118)**

*Comment noted.*

*Arthur (R.D.) Grunbaum, Friends of Grays Harbor*

**Comment 119)**

Review of the Draft Permit raises some concerns for our constituents and we request that an extension is given to the comment period to allow further analysis of this dramatic expansion of pollution to the Grays Harbor Estuary.

Conclusions made by the Department of Ecology were based on two documents: Analysis of the Available Scientific and Public health Data Regarding the Cosmopolis Mill's Effluent: The Public Health Significance of the Effluent, and its Impact on Water Quality in Grays Harbor, Shellfish Growing Waters, and Shellfish, IEH, Inc. 2002 and Grays Harbor Hydrodynamic & Water Quality Modeling Report, CH2MHill, 2002. While the fact sheet states "These documents can be found on the web at: <http://www.ecy.wa.gov/industrial/proposed.asp>," we were unable to access these Appendices for review. Since this apparently is the basis upon which the mixing zone and fecal coliform limits are increased, it is critical for the public to have the opportunity to read, analyze and review these base documents.

**Response 119)**

*The comment period was extended from June 9<sup>th</sup> to June 30, 2003. The referenced documents were placed on the Industrial Section WEB site during the extended comment period.*

**Comment 120)**

The permit increases the mixing zone from 1300 meters (.81 miles) to 3000 meters (1.86 miles) roughly 2-1/3 times its present delineation, however there doesn't appear to be any discussion about cumulative effects of this expansion.

**Response 120)**

*The statement is incorrect. Weyerhaeuser proposed an extended mixing zone of 3000 meters. We did not accept increasing the mixing zone beyond the 1300 meters. The extended dilution zone for the Weyerhaeuser outfall is located in the South Channel of Grays Harbor. Since all other discharges are located in the North Channel of Grays Harbor it is doubtful if any of them are mixed with the Weyerhaeuser discharge during the transit time through the extended dilution zone. Also, the overlap criteria are exempt for the extended mixing zone according to WAC 173-201A-100(12).*

**Comment 121)**

How will the increased mixing zone affect the permit renewals of the other existing point source permits within the mixing zone?

**Response 121)**

*The Weyerhaeuser Company's fecal coliforms are unique in terms that they have been cultured in their wastewater treatment system in a warm environment. When they are discharged to the cold salty water of Grays Harbor, approximately 50 % of the bacteria die in the first few seconds. We do not consider that the higher limit will affect other discharge permits with respect to fecal coliform. There are no other discharges in the Weyerhaeuser mixing zone. See Response 81.*

**Comment 122)**

What is the zone definition of Weyerhaeuser? Describe and/or illustrate so that an impact and overlay map could be developed.

**Response 122)**

*See last paragraph on page 25 of the factsheet and response 131.*

**Comment 123)**

How does that zone interact with existing permitted zones of Aberdeen Wastewater Treatment Plant, Hoquiam Treatment Plant, Grays Harbor Paper and other industrial NPDES permits in the immediate and adjacent areas?

**Response 123)**

*See Response 120*

**Comment 124)**

What is the effect of water quality to the fecal count transport to the DOH sanitary line?

**Response 124)**

*The water quality criteria are met at the A/B boundary. The A/B boundary is upstream of the sanitary line.*

**Comment 125)**

What would be the typical flow rate during winter storms?

**Response 125)**

*The river flow depends on the intensity and duration of the storm event. The highest flow from outfall 001 during November 2001 to February 2002 was 25.6 MGD.*

**Comment 126)**

Storms and other events can stir up the sediment and fecal coliform can become reintroduced to the water column. What would be the impact of wave and wind surge to the mixing and possible turbidity?

**Response 126)**

*The Department of Health closes the oysterbeds after the Chehalis River at Grand Mound rises to 14 feet. The turbidity would depend on the storm's intensity, the velocity of the wind, and the height of the tide. The discharge from Weyerhaeuser outfall would have very little influence on the turbidity.*

**Comment 127)**

What is the oxygen requirement of fecal coliforms and how would this affect the receiving waters oxygen level?

**Response 127)**

*The fecal coliform impact on dissolved oxygen would be very small since the total mass of the bacteria is very small.*

**Comment 128)**

The fact sheet at page 23 states: "However, with the extended mixing zone they may use less chlorine containing chemicals thus reducing the production of AOX. If the fecal coliform found in the discharge is above the Department of Health closure criteria but below the proposed permit limit on a continuing basis and the oyster growers are impacted." What are the best case and worst case scenarios for this eventuality?

**Response 128)**

*See Response 16.*

**Comment 129)**

What is the reasonable potential for this to occur? How many times could this occur in a 12 month period?



**Response 129)**

*We expect that it would be infrequently. See Response 16*

**Comment 130)**

The Grays Harbor Estuary has been on the 303d list for fecal coliform for over 5 years. However the draft permit proposes to increase the fecal limits over 4 times the existing limits. The combined permitted geometric mean for Outfall #1 and #2 is 48,000 colonies/100mL (42,000 #1; 6,000 #2), with no more than 10% of the samples exceeding a combined total of 196,000 colonies (182,000 #1; 14,000 #2).

The oyster and shellfish industry provides a significant economic benefit to the Grays Harbor area and State of Washington. The industry is regulated on a very stringent fecal colony limit. Exceeding that limit has been detrimental to the oystergrowers and has resulted in the closure of the Bay to shellfish harvesting. In the past under the existing permit which had a limitation of 20,000 colonies/100 mL, Weyerhaeuser had difficulties containing their permit levels of fecal coliforms. This resulted in closing down the shellfish growers from harvesting. An October 22, 2001 Press Release from the Department of Ecology references a \$14,000 fine levied against the pulp mill:

“OLYMPIA - The Weyerhaeuser Company’s Cosmopolis pulp mill has been fined \$14,000 by the state Department of Ecology (Ecology) for allowing high levels of fecal coliform bacteria to enter Grays Harbor through its wastewater discharge.

The discharges occurred on June 15, 18, 19 and Aug. 9. The highest of the June discharges was nearly three times the maximum level allowed by the mill’s wastewater discharge permit.

The August discharge was eight times the maximum level, prompting state health officials to close a portion of Grays Harbor to commercial shellfish harvesting for seven days. People can become sick after eating shellfish containing fecal coliform bacteria.

The discharges occurred at the mill’s outfall located in the south channel of the inner harbor.

The mill has been fined repeatedly for similar discharges in the past.

‘It is abundantly clear to the company that the mill has a problem, and we’ve been working together to try to fix it,’ said Carol Kraege, who manages Ecology’s industrial section.

“Somehow, we need to find a way to help the mill operate without leaving Grays Harbor unfit for harvesting shellfish.”

It appears that the solution crafted by Weyerhaeuser’s consultants and the Department of Ecology was to expand and increase permit limits thereby eliminating the Company’s permit violations. We are concerned however, that the public health and safety issues that were valid with the smaller zone and lower limits still remain.

**Response 130)**

*See Responses 9, 14, 16, 22, & 24. The permit issued in 1991 did not allow for any die-off of fecal coliform. The proposed permit is based on current knowledge of the fate of fecal*

*coliform in the receiving waters. In addition, Weyerhaeuser has conducted extensive studies which indicated that there is a low probability that the bacteria found in their effluent are human pathogens. DOH increased the trigger that they use to close the commercial oyster beds from 20,000 to 85,000 colonies/100 milliliters as a result of the studies performed by Weyerhaeuser Company.*

*It is incorrect to add the limits for outfalls 001 and 002 together since they are discharging into different classes of water. Outfall 002 discharges into Class A freshwater and outfall 001 discharges into Class B marine water. The proposed permit limit for outfall 001 is a monthly geometric mean of 42,000 count/100 mL with no more than 10 % exceeding 128,000 count/100 mL.*

**Comment 131)**

How does the increased Weyerhaeuser fecal limit and mixing zone protect the use by the public and shellfish harvesters?

Fishing in the Grays Harbor area has been a mainstay of tourism, tribal culture, and commercial fisheries. The Estuary is a nursery to many commercially significant marine creatures, such as crab, salmon, sole, sturgeon and a myriad of forage fish that feed our diverse aquatic denizens and internationally significant wildlife. Humans recreate in the waters of the Chehalis and Grays Harbor. As different fishing seasons open many fishers are found trolling the waters of Grays Harbor and the Chehalis.

**Response 131)**

*It is expected that the extended mixing zone would have only a small impact on fishing and recreation. The permittee has performed pathogen tests to determine if their effluent contains pathogens. As of this date they have found none. The area where the fecal coliform value exceeds the water quality criteria extends 4300 feet above and below the discharge point. The plume's width is about 400 feet according to the model performed to determine the length of the mixing zone. The actual contact would be short and is expected to have very little impact. Commercial shellfish harvesting is prohibited in the extended mixing zone area.*

**Comment 132)**

What is the effect of increased fecal loading to a 1.86 mile area used for fishing and recreational uses?

**Response 132)**

*The mixing zone did not increase to 1.86 miles. The fecal coliform count may exceed water quality criteria in area within 1300 meters (0.81 miles dilution zone) and 400 feet width. The company tested their effluent for pathogens and found none. Under these conditions it is*

*unlikely that there would be any human contact with pathogens coming from the Weyerhaeuser outfall.*

**Comment 133)**

What is the effect of increased fecal loading on juvenile salmon as they pass from the Chehalis into the estuary?

**Response 133)**

*Fecal coliform is a group of bacteria that inhabit the intestines of warm blooded mammals. Since fish are cold blooded and the temperature of their bodies are about the temperature of the ambient water, we would not expect fish to be affected by fecal coliform. Fecal coliform affect the consumption of oysters because they are filter feeders and thereby concentrate the fecal coliform in their systems.*

**Comment 134)**

What is the effect on bottom dwelling and bottom feeding organisms?

**Response 134)**

*Part of the fecal coliform load will settle to the bottom. At the die-off rate of the fecal coliform bacteria shown in the IEH's, Inc. study, the portion of the bacteria alive after settling would be small. Therefore, the discharge is not expected to affect the bottom feeders. See **Response 133**.*

**Comment 135)**

Non-conservative pollutants are pollutants that degrade in the receiving water. Some typical nonconservative pollutants are BOD, ammonia nitrogen, and fecal coliform. As mentioned before the Chehalis River and Grays Harbor Estuary are on the 303d list.

The Department of Ecology's Permit Writers' Manual, 92-109 gives guidance to the permit writer when the water is on the 303d list. "Once the water quality impairment is confirmed or verified the following principle is in effect:

There can be no additional loading or higher concentration allowed for the listed pollutants at times of impairment until the TMDL is completed and it shows dilution available at full implementation of the TMDL."

**Response 135)**

*The WLA and permit limit for fecal coliform in the TMDL were determined in the writing of the proposed permit.*

**Comment 136)**

What is the justification for ignoring the Grays Harbor TMDL study?

**Response 136)**

*We did not ignore the TMDL. See Response 10, 14, & 135.*

**Comment 137)**

What is Ecology's interpretation of the intent of the Legislature in their rule making to protect the waters of Washington State?

**Response 137)**

*The extended mixing zone and the higher fecal coliform limit conform to Chapter 173-201A WAC.*

**Comment 138)**

What are the criteria by which a permit limit modification can jeopardize another industry?

**Response 138)**

*See Responses 14, 89 & 100.*

**Comment 139)**

If this Permit allows the increase of the mixing zone, how will the Department reconcile the need for Aberdeen the Wastewater Treatment Plant (and other NPDES Permits) to maintain one fecal level, while the Weyerhaeuser permit allows a different standard and mixing zone?

**Response 139)**

*See Response 14.*

**Comment 140)**

If the mixing zone is adequate for Weyerhaeuser's effluent which is roughly 5 times the volume of Aberdeen, why wouldn't it be reasonable for Aberdeen (and others with less flow) to use this same justification and therefore reduce their treatment process?

**Response 140)**

*The municipal wastewater limits for fecal coliform are technology based and are derived from break point chlorination. These limits are published in the Code of Federal Regulations. Breakpoint chlorination is not achievable at the mill. If there were a need to reduce fecal coliform in any discharged wastewater effluent, a WLA would be determined within the TMDL. Weyerhaeuser's WLA was determined in the proposed permit. See Responses 14.*

**Comment 141)**

We are greatly concerned that the accommodations made to the Weyerhaeuser, Cosmopolis NPDES permit does not protect the water quality of the Chehalis River and Grays Harbor Estuary. We are concerned that a 2-1/3 increased mixing zone and roughly 4 times increase in fecal coliform loads is degradation to an already impaired 303d waterway. We feel that additional time for review is necessary to fully understand and review this potentially negative impact.

**Response 141)**

*See Responses 10, 14, 62, 63. We are unacquainted with the 2-1/3 increase in the mixing zone and roughly 4 times increase in fecal coliform loads numbers. The extended mixing zone is 4300 feet and the fecal coliform limit is a monthly geometric mean of 42,000 count/100 ml with no more than 10 % exceeding 128,000 count/100 ml. The company suggested a higher limit and a longer mixing zone, but we did not place either in the permit. The comment period was extended to June 30, 2003.*



Washington State Legislature

April 15, 2003

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APR 18 2003

Mr. Don Nelson  
Industrial Section  
Department of Ecology  
P.O. Box 47706  
Olympia WA 98504-7706

Mr. Tom Fitzsimmons, Director of Ecology  
Department of Ecology Executive Office  
P.O. Box 47600  
Olympia WA 98504-7600

RE: **Comments on Draft NPDES Permit #WA-000080-9**  
**Weyerhaeuser Company**  
**Cosmopolis, Washington**

Dear Mr. Nelson and Director Fitzsimmons,

Weyerhaeuser's Cosmopolis Pulp Mill is an important component of the economy of Washington's coastal counties, including Grays Harbor, Pacific, and Mason counties. The mill employs more than 250 people with an annual payroll of \$22 million. As you know, the past few years have been very challenging to the pulp and paper sector and the Cosmopolis Mill continues to struggle to remain profitable. Elimination of unnecessary costs is crucial in this difficult economic climate. Weyerhaeuser is spending in excess of \$3 million per year to chemically treat mill wastewater to meet end of pipe bacteria limits required by their NPDES permit.

On May 16, 2002, we wrote to the Department of Ecology and Department of Health asking both agencies to,

"...carefully evaluate the scientific information developed by Weyerhaeuser since 1995, and make a reasoned, science based decision on the true ability of Cosmopolis origin bacteria to cause human health problems. Agency decisions in the mill NPDES permit and the Grays Harbor TMDL should conform to this science based assessment."

We made that request based on the overwhelming scientific evidence that had been gathered since 1995 demonstrating that mill origin bacteria did not indicate the presence of fecal material. Additionally, we are concerned that there is more potential for environmental harm to Grays Harbor resulting from the requirement to disinfectant mill effluent with a chlorine-based disinfection chemical.

Since we made that request, Weyerhaeuser has completed additional studies on the fate of mill origin bacteria and on the actual movement of water within Grays Harbor. On April 9, 2003, DOE issued a draft NPDES permit for the Cosmopolis mill for public comment.

Mr. Don Nelson  
Mr. Tom Fitzsimmons  
April 15, 2003  
Page two

Weyerhaeuser, in cooperation with DOE, DOH, and local stakeholders, has clearly demonstrated that:

- ◆ The discharge from the Cosmopolis mill wastewater treatment system does not pose a risk to human health or impair the beneficial uses (including shellfish rearing) in Grays Harbor. More than 400 analyses of mill wastewater have documented the absence of fecal pathogens. In short, the best information demonstrates that the Cosmopolis bacteria do not even match the regulatory definition of “fecal coliform.”
- ◆ Mill origin bacteria die quickly when exposed to receiving waters and environmental conditions in Grays Harbor. Controlled studies show that approximately 50% of the bacteria die instantly on contact with receiving water; with complete mortality within 44 hours. Additionally, dispersion modeling in Grays Harbor shows that mill origin bacteria concentrations at the sanitary line will not exceed levels that would require closure of shellfish harvest.

To summarize, the research clearly shows that mill wastewater bacteria do not adversely impact water quality, do not pose a risk to human health, and do not impact shellfish rearing areas.

The draft NPDES permit, however, will still require costly, and environmentally damaging disinfectant treatments by Weyerhaeuser. Accordingly, we offer the following suggestions for how the draft permit should be modified:

1. The draft permit fails to incorporate the best available scientific information. There has been no dispute over the findings and conclusions of Weyerhaeuser’s research. Indeed, it appears that everyone agrees with the conclusions of their research. Permitting decisions should be true to these findings. If the Cosmopolis bacteria do not even meet the regulatory definition of “fecal coliform,” the discharge should not be regulated as if they did.
2. The mill is vitally important to the economy of our region. As Legislators, we believe that DOE should aggressively seek all possible avenues to help troubled businesses in Washington, particularly those in distressed rural areas. The agency should apply its considerable discretion in implementing environmental regulations to both protect public health and beneficial water uses, and support responsible business. Permitting decisions should not casually impose costs on a permittee where no evidence of an environmental or human health issue is demonstrated (Indeed, in this case the permitting decision actually results in a degraded receiving water quality due to the inadvertent creation of a chlorinated organic compound.)



Mr. Don Nelson  
Mr. Tom Fitzsimmons  
April 15, 2003  
Page three

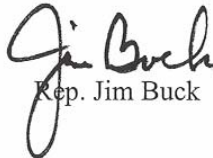
3. DOE should require an appropriate monitoring program during the permit term to document that fecal pathogens are not present in the Cosmopolis wastewater.

We appreciate the opportunity to provide comments on the draft permit. Please don't hesitate to contact any of us if you would like to discuss this further.


Sincerely,




Rep. Brian Hatfield



Rep. Jim Buck




Rep. Bill Eickmeyer

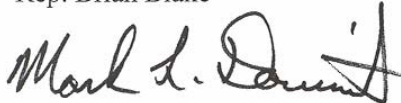


Rep. Brian Blake

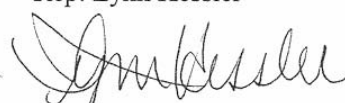
Rep. Lynn Kessler




Rep. Kathy Haigh



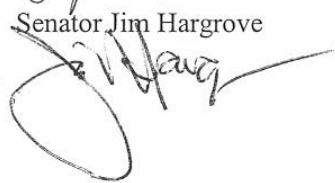
Senator Mark Doumit



Senator Jim Hargrove



Senator Tim Sheldon



Cc: Governor Gary Locke  
Speaker Frank Chopp  
Senator Jim West  
Senator Lisa Brown  
Senator Bob Morton  
Rep. Kelli Linville





STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

P.O. Box 47600 • Olympia, Washington 98504-7600  
(360) 407-6000 • TDD Only (Hearing Impaired) (360) 407-6006

May 12, 2003

The Honorable Mark Doumit  
The Honorable Jim Hargrove  
The Honorable Tim Sheldon  
The Honorable Brian Hatfield  
The Honorable Jim Buck  
The Honorable Bill Eickmeyer  
The Honorable Brian Blake  
The Honorable Lynn Kessler  
The Honorable Kathy Haigh  
Washington State Legislature  
Olympia, WA 98504

Dear Legislators:

Please excuse my delay in responding to your April 15, 2003, letter commenting on the wastewater permit for the Weyerhaeuser mill at Cosmopolis. We appreciate your interest and suggestions in this most recent letter and the letter you sent last May asking Ecology and the Department of Health to carefully evaluate the scientific information developed by Weyerhaeuser since 1995 and to make reasoned, science-based decisions regarding the establishment of permit limits for this mill. I assure you that we have willingly and creatively followed your advice.

The Ecology employees assigned to this project have worked hard to understand the company's concerns and to meet their interest of reducing treatment costs while not violating water quality and shellfish standards. As a result, I am pleased to report that we were able to use Weyerhaeuser's study results in the preparation of the draft permit that is now out for public review. While we do not agree with all of Weyerhaeuser's proposed conclusions regarding these studies, we have crafted a proposed permit which goes a long way toward meeting the company's goal of eliminating disinfection costs. As we understand it, the draft permit will reduce the cost of disinfection by 90%, saving the company some \$2.7 million a year. In fact, our proposed limits have the same operational costs as the company's proposal.

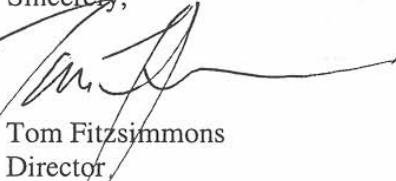
Legislators  
May 12, 2003  
Page 2

Because of health concerns by the Department of Health based on shellfish standards of the U.S. Food and Drug Administration, we have not been able to find a way to completely eliminate the final 10% needed for disinfection without compromising the viability of the oyster growing industry in Grays Harbor. You may not be aware that for every day the mill exceeds health standards, the oyster beds in your local area must shut down for a week.

I assure you that we are aware of the importance of this mill to the community and have applied all the regulatory discretion available to us. The resulting permit does not casually impose costs on the mill, nor does it unfairly shift the costs of compliance to another industry in the area. At the same time, we have offered to review further information from the company during the public comment period.

Thank you for your continued interest in this matter. If you have further questions, please contact Cullen Stephenson at (360) 407-6103.

Sincerely,



Tom Fitzsimmons  
Director

cc: The Honorable Gary Locke  
The Honorable Frank Chopp  
The Honorable Jim West  
The Honorable Lisa Brown  
The Honorable Bob Morton  
The Honorable Kelli Linville



## Washington State Legislat

### District 19

Rep. Brian Hatfield  
Rep. Brian Blake  
Sen. Mark Donnit

### District 24

Rep. Jim Buck  
Rep. Lynn Kessler  
Sen. Jim Hargrove

June 6, 2003

RECEIVED

JUN 09

Mr. Tom Fitzsimmons  
Department of Ecology  
P.O. Box 47600  
Olympia, WA. 98504-7600

Dept. of Ecology  
Executive Office

Dear Director Fitzsimmons:

The Coastal Caucus would like to thank you for responding to our letter asking for Department of Ecology to evaluate the scientific information developed by Weyerhaeuser regarding the establishment of wastewater permit limits for the mill in Cosmopolis.

We appreciate the hard work you and your employees have gone through to understand the company's concerns and to meet their interests in reducing treatment costs while not violating water quality and shellfish standards. We are pleased to hear that the Department of Ecology is able to use Weyerhaeuser's study results in the preparation of the draft permit. This will be a tremendous saving for Weyerhaeuser.

Again, we would like to thank you for your efforts in working with the Coastal Caucus and Weyerhaeuser in understanding our concerns.

Sincerely,

Rep. Brian Hatfield  
District 19

Rep. Lynn Kessler  
District 24

Rep. Bill Eickmeyer  
District 35

Rep. Brian Blake  
District 19

Rep. Jim Buck  
District 24

Rep. Kathy Haigh  
District 35

Sen. Mark Donnit  
District 19

Sen. Jim Hargrove  
District 24

Sen. Tim Sheldon  
District 35

COASTAL CAUCUS  
PO BOX 40600  
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